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ABSTRACT

Part of a larger research project, this descriptive study identified the range and characteristics of learning strategies used in studying foreign languages. Related studies include a course development study, in which foreign language instructors teach their students to apply learning strategies, and a longitudinal study that analyzed differences between effective and ineffective high school and college language learners and changes in strategy uses over time. Subjects were 67 high school students of Spanish and 34 college students of Russian. Research questions focused on types of strategies used, strategy variation by language of study, and strategy variation by course or proficiency level. Results suggest that students use a wide variety of strategies regardless of the language under study, and that students at all levels of instruction use predominantly cognitive strategies supported by metacognitive strategies that help them plan, monitor, and evaluate their work. The Learning Strategies Inventory (LSI) and interview guides are appended. Contains 38 references. (LB)

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A Study of Learning Strategies in Foreign Language Instruction

FIRST YEAR REPORT

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A STUDY OF LEARNING STRATEGIES IN FOREIGN LANGUAGE INSTRUCTION

FIRST YEAR REPORT

Abstract

This project consists of three major studies: (a) a Descriptive Study, which identified learning strategies used in studying foreign languages; (b) a Longitudinal Study, which is analyzing changes in strategy use over time; and (c) a Course Development Study, in which foreign language instructors will teach their students to apply learning strategies. The Descriptive Study was completed in the first year of the project. The Longitudinal Study was initiated during the first year and will continue in the second and third years of the project. The Course Development Study will be initiated in the second year of the project and completed in the third year.

This First Year Report presents the methodology and findings of the Descriptive Study. In addition, a description of the methodology used for the Longitudinal Study and preliminary analyses of sample data are presented. This report consists of the following chapters:

Introduction and Literature Review. Chapter I presents background information about the project and the objectives of the Descriptive Study. A selected review of the place of learning strategies in second language acquisition theory is followed by a description of prior research on second language learning strategies. Next, a model for research on second language learning strategies based on a cognitive model of learning is described. Finally, the research questions used in the Descriptive Study are stated.

Methodology. Chapter II provides detailed information about the selection of subjects, the development of instruments, and the collection of data for both the Descriptive and the Longitudinal studies.

Results of the Descriptive Study. Chapter III presents the findings of the Descriptive Study and discusses their implications in terms of student strategy use.

Methods of Analysis for Think Aloud Data. Chapter IV presents representative samples of analyzed data from the Longitudinal Study to illustrate the complex nature of the think-aloud protocols and the differences they reveal in strategy use between effective and ineffective language learners.

Applications. Chapter V presents guidelines for applying the findings of the Descriptive Study to foreign language classrooms. Ways in which instructors can identify and capitalize on the learning strategies their students are already using are suggested.

A STUDY OF LEARNING STRATEGIES IN FOREIGN LANGUAGE INSTRUCTION: FIRST YEAR REPORT

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January 1987

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CHAPTER I. INTRODUCTION TO A STUDY OF LEARNING STRATEGIES IN FOREIGN LANGUAGE INSTRUCTION

This paper is the First Year Report for the project "A Study of Learning Strategies in Foreign Language Instruction", which is being conducted by Interstate Research Associates under a grant awarded by the International Research and Studies Program of the U.S. Department of Education. The project consists of three major studies: (a) a Descriptive Study, which identified learning strategies used in studying foreign languages; (b) a Longitudinal Study, which is analyzing changes in strategy use over time; and (c) a Course Development Study, in which foreign language instructors will teach their students to apply learning strategies. The Descriptive Study was completed in the first year of the project, and the Longitudinal Study was initiated during this period. The Longitudinal Study will continue in the second and third years of the project, and the Course Development Study will be initiated in the second year of the project and completed in the third year.

The major purpose of this First Year Report is to present the methodology and findings of the Descriptive Study. In addition, a description of the methodology used for the Longitudinal Study and a representative sample of analyzed data from this study are presented. Subsequent reports will present the findings of the Longitudinal Study and the methodology and findings of the Course Development Study.

The purpose of the Descriptive Study was to identify the range and characteristics of learning strategies used by high school students of Spanish and by college students of Russian as foreign languages. Each

language group was composed of students at the beginning and intermediate/advanced levels of study, and included students representing a range of language learning ability. Students were observed in their foreign language classes, and data were collected through a Learning Strategies Inventory and through small group interviews. The Descriptive Study focused on differences in strategy use reported by students at different levels of study in each language for a variety of language tasks.

Introduction

Research and theory in second language learning strongly suggest that good language learners use a variety of strategies to assist them in gaining command over new language skills. Learning strategies are operations or steps used by a learner to facilitate the acquisition, storage, or retrieval of information (Rigney, 1978; Dansereau, 1985). Second language learners who use active and varied strategies to assist their learning tend to be more effective learners than those who do not use strategies or who rely upon simple rote repetition (O'Malley, Chamot, Stewner-Manzanares, Kupper, & Russo, 1985a; Politzer & McGroarty, 1985; Rubin, 1975; Wenden, 1985). Although some learners are adept at devising strategies to assist second language acquisition, many others tend to be less effective at developing strategies and consequently may encounter difficulties in learning the new language.

Learners can be trained to apply strategies to second language learning tasks. For instance, strategy training has led to improved recall of vocabulary (Cohen & Aphek, 1981) and improved listening and speaking skills (O'Malley, Chamot, Stewner-Manzanares, Russo, & Kupper, 1985b). However,

individuals may not always adopt new strategies if they already have had prior success with simpler strategies or if their training has not been sufficient to encourage transfer (O'Malley et al., 1985b). For this reason, second language teachers need to play an active role in teaching their students how to apply learning strategies to varied language activities and how to extend the strategies to new tasks.

Background

Studies of learning strategies with second language learners have been influenced by theories in second language acquisition and in cognitive psychology. Although there have been theoretical advances in these two areas, there has been little communication between them which might lead to reformulation of research questions or designs. Relevant second language and cognitive research are briefly reviewed below. Theories of second language acquisition are discussed to identify cognitive processes that relate to learning strategy applications. Research on learning strategies in both the second language area and in cognitive psychology is described. Following this discussion is a description of how research and theory in second language learning and cognitive psychology can be integrated into a model for research on language learning strategies.

Second Language Acquisition Theory

Theories of second language learning and proficiency often include a cognitive component, but the role of learning strategies has remained vague. In Cummins' (1984) model of language proficiency, tasks vary along a continuum from cognitively undemanding to cognitively demanding, while

language varies along a continuum from context-embedded to context-reduced. Academic tasks, for example, are cognitively demanding and usually require language in which contextual cues for meaning are reduced. Tasks outside the classroom, on the other hand, are relatively undemanding cognitively and are characterized by language that either has rich contextual clues or is formulaic. The role of learning strategies, although potentially located in the cognitive component of this proficiency model, has never been expressly identified.

Other models of language competence also contain cognitive components but leave the role of learning strategies ambiguous. For example, Canale and Swain's (1980) model of communicative competence includes grammatical, sociolinguistic, and strategic competence. In this model, the strategic component refers to communication strategies, which can be differentiated from learning strategies by the intent of the strategy use. Wong Fillmore and Swain's (1984) model of second language competence includes a cognitive component as well as linguistic and affective components. Unlike prior conceptual models, Wong Fillmore and Swain reserve an important role for learning strategies in the cognitive component. Learning strategies are said to be the principal influence on learning a second language for children, whereas inherent developmental and experiential factors are primarily responsible for first language learning, in their view. The types of strategies described by Wong Fillmore and Swain appear to be more global than those usually described in cognitive psychology, however, and the role they play with regard to the other model components has not been identified.

While most second language models either fail to acknowledge learning strategies at all or mention them only in passing, Bialystok (1978) includes four categories of learning strategies in her model of second language learning: inferencing, monitoring, formal practicing, and functional practicing. In this model, learning strategies are defined as "optimal means for exploiting available information to improve competence in a second language" (71). The type of strategy used by the learner will depend on the type of knowledge required for a given task. Bialystok discusses three types of knowledge: explicit linguistic knowledge, implicit linguistic knowledge, and general knowledge of the world. She hypothesizes that inferencing may be used with implicit linguistic knowledge and knowledge of the world. Monitoring, formal practicing (such as verbal drills found in a second language class), and functional practicing (such as completing a transaction at a store) contribute both to explicit and implicit linguistic knowledge. That is, strategies introduced explicitly in a formal setting can contribute to implicit linguistic knowledge and therefore to students' ability to comprehend and produce spontaneous language.

Bialystok's model can be contrasted to Krashen's Monitor Model (1982), which does not allow for contributions of explicit linguistic knowledge (learning) to implicit linguistic knowledge (acquisition). The Monitor Model includes two types of language processes: "acquisition" and "learning." "Acquisition" is described as occurring in spontaneous language contexts, is subconcious, and leads to conversational fluency. "Learning," on the other hand, Krashen equates with conscious knowledge of the rules of language that is derived from formal and traditional instruction in grammar. The "monitor" is a conscious process which

involves analyzing language production (either oral or written) for correspondence to learned grammatical rules, which means that it is a highly deliberate form of processing. In Krashen's view, "learning" does not lead to "acquisition." Therefore, the conclusion is inescapable that conscious use of learning strategies to develop language competence has no role in this model.

McLaughlin, Rossman, and McLeod (1983) propose an information processing approach to second language learning. In this theory, the learner is viewed as an active organizer of incoming information with processing limitations and capabilities. While motivation is considered to be an important element in language learning, the learner's cognitive system is central to processing. Thus, the learner is able to store and retrieve information according to the degree to which the information was processed. Evidence for aspects of the information processing model comes from studies of language processing and memory. One implication of information processing for second language acquisition is that learners actively impose cognitive schemata on incoming data in an effort to organize that data. McLaughlin et al. (1983) proposed that the learner uses a top-down approach (or knowledge-governed system) which makes use of internal schemata as well as a bottom-up approach (or an input-governed system) which processes external input to achieve automaticity. In both cases, cognition is involved and the degree of cognitive involvement required is set by the task itself.

Spolsky (1985) proposes a model of second language acquisition based on preference rules. In his view, three types of conditions apply to second language learning, one of which is a necessary condition and the other two

of which depend on the learner's preference, which could be cognitive or affective in origin. A necessary condition is one without which learning cannot take place. Examples of necessary conditions in second language learning are target language input, motivation, and practice opportunities. A second type of condition is a gradient condition, in which the greater the degree of the condition's occurrence, the more learning is likely to take place. An example of a gradient condition might be the greater or lesser degree to which a learner actively seeks out interactions with native speakers of the target language, or the greater or lesser degree to which a learner can fine tune a learning strategy to a specific task. The third type of condition is one which typically, but not necessarily always, assists learning. An example of a typicality condition might be that risk-taking, outgoing personalities tend to be good language learners in general, though in some cases quiet and reflective learners can be equally or more effective (Saville-Troike, 1984).

Spolsky's model of second language acquisition consists of two clusters of such conditions or factors. The first cluster contains social context conditions, such as the learning setting and opportunities. The second cluster consists of learner factors, such as capability, prior knowledge, and motivation. The learner makes use of these factors to interact with the social context of learning, and this interaction leads to the amount of language learning that takes place. Thus, this model accounts for variability in second language learning outcomes through differing degrees of or preferences for application of gradient and typicality conditions. In Spolsky's model, learning strategies, while not specifically identified as such, would be part of the capabilities and prior learning experiences that the learner brings to the task.

Research in Learning Strategies

Research in learning strategies in the second language acquisition literature has focused for the most part on describing strategies used by successful language learners. Research efforts concentrating on the "good language learner" by O'Malley et al. (1985a) and others (Naiman, Frohlich, Stern, & Todesco, 1978; Rubin, 1975; Wenden, 1983) have identified strategies, either reported by students or observed in language learning situations, that appear to contribute to learning. These efforts demonstrate that students do apply learning strategies while learning a second language and that these strategies can be described and classified.

A classification scheme proposed by Rubin subsumes learning strategies under two broad groupings: strategies that directly affect learning (clarification/verification, monitoring, memorization, guessing/inductive reasoning, deductive reasoning, and practice), and those which contribute indirectly to learning (creating practice opportunities and using production tricks such as communication strategies). An alternative scheme proposed by Naiman, Frohlich, Stern, and Todesco (1978) contains five broad categories of learning strategies: an active task approach, realization of a language as a system, realization of language as a means of communication and interaction, management of affective demands, and monitoring of second language performance. O'Malley et al. (1985a) investigated the types of learning strategies reported by effective learners of English as a second language, and found that the strategies could be described in terms of metacognitive, cognitive, or social-affective processes. Oxford-Carpenter (1985) has compiled a list of the various language learning strategies identified through the aforementioned research.

A recently completed descriptive study compared strategies used by ineffective as well as by effective second language learners in various types of listening comprehension tasks (O'Malley, Chamot, & Kupper, 1986). Both groups of students used metacognitive, cognitive, and social-affective strategies to assist comprehension and recall of the material listened to. The pattern of strategy use was quite different, however, for the effective listeners. Not only did effective listeners use strategies more frequently than did the less effective students, but they differed in the types of strategies they preferred. Effective listeners made frequent and successful use of self-monitoring, elaboration, and inferencing, whereas ineffective listeners used these strategies infrequently. A preference model such as Spolsky's (1985), as previously described, is useful in accounting for such differences in strategy use between effective and ineffective learners. Frequency of strategy use can be seen as a gradient condition in which greater instances of strategy use are likely to be associated with effective learning. Type of strategies used can be seen as a typicality condition in which effective learners typically use particular strategies that assist comprehension and recall.

Studies of learning strategy applications in the literature on cognitive psychology concentrate on determining the effects of strategy training for different kinds of tasks and learners. Findings from these studies generally indicate that strategy training is effective in improving the performance of students on a wide range of reading and problem-solving tasks (e.g., Brown, Bransford, Ferrara, & Campione, 1983; Chipman, Siegel, & Glaser, 1985: Dansereau, 1985; Weinstein & Mayer, 1986; Wittrock, Marks, & Doctorow, 1975).

One of the more important findings from these studies is the formulation of learning strategies in an information-processing, theoretical model. This model contains an executive, or metacognitive, function in addition to an operative, or cognitive-processing, function. Metacognitive strategies involve thinking about the learning process, planning for learning, monitoring of comprehension or production while it is taking place, and self-evaluation of learning after the language activity is completed. Cognitive strategies are more directly related to individual learning tasks and entail direct manipulation or transformation of the learning materials (Brown & Palincsar, 1982). A third type of learning strategy suggested in the literature on cognitive psychology suggests that social and affective processes can also contribute to learning, which are most clearly evidenced in cooperative learning (Brown, Bransford, Ferrara, & Campione, 1983; Slavin, 1980). Learners who ask questions for clarification and interact with each other to assist learning, as well as those who are able to exercise a degree of affective control, are also conscious of using strategies which contribute to learning. Cooperative strategies have been shown to enhance learning on a variety of reading comprehension tasks (Dansereau & Larson, 1983) and other areas of the curriculum, such as language arts, mathematics, and social studies (Slavin, 1980).

Research in metacognitive and cognitive learning strategies suggests that transfer of strategy training to new tasks can be maximized by pairing metacognitive strategies with appropriate cognitive strategies. Students without metacognitive approaches are essentially learners without direction or opportunity to plan their learning, monitor their progress, or review their accomplishments and future learning directions.

Research on training second language learners to use learning strategies has emphasized applications with vocabulary tasks. Dramatic improvements in individually presented vocabulary learning tasks have been reported in these studies. The typical approach in this research has been either to encourage students to develop their own associations for linking a vocabulary word with its equivalent in the second language (Cohen & Aphek, 1980; 1981), or to train students to use specific types of linking associations to cue the target word, such as the keyword method (e.g., Atkinson & Raugh, 1975; Pressley, Levin, Nakamura, Hope, Bisbo, & Toye, 1980). Generally, the strategy training is given individually or is provided by special instructional presentations to a group. Recently, a classroom-oriented approach to learning strategy training was studied (O'Malley et al., 1985b). In this approach, intact classes of second language students were taught to use learning strategies for three different tasks, including two integrative language tasks (listening comprehension and oral presentation). Results indicated that learning strategy instruction was associated with greater proficiency in the speaking task, and that learning strategy instruction also improved listening comprehension for tasks that were not beyond the students' range of competence.

A Cognitive Model for Research on Second Language Learning Strategies

One of the major difficulties in performing research with learning strategies in second language acquisition is that until recently there has been no adequate theory to describe the role of cognition in language learning, or any theoretical description indicating what influence learning strategies play on memory processes in general (O'Malley, Chamot, & Walker,

1986). In the absence of this kind of information, studies of learning strategies in second language acquisition can do little more than introduce new strategy classification schemes or descriptions of learners, tasks, and occasions to which strategies are applied. Furthermore, strategy training will be limited to demonstrations of new types of learners and tasks with which training may or may not be effective. The more productive work of building a systematic understanding of the role of strategies in second language acquisition would go unattended, and applications would be piecemeal rather than integrated into instructional theory.

Recent efforts to describe both second language acquisition and learning strategies within the cognitive theory proposed by Anderson (1981; 1983; 1985) have provided the necessary theoretical foundation to guide further research in this area (O'Malley et al., 1986). Anderson suggests that language can best be understood as a complex cognitive skill and that mental processes involved in language parallel the processes used with other cognitive skills both in memory representation and in learning.

In describing memory processes, Anderson distinguishes between declarative knowledge, or what we know about, and procedural knowledge, or what we know how to do. Examples of declarative knowledge include the definitions of words, facts, and rules, including our memory for images and sequences of events. This type of knowledge is represented in long term memory in terms of meaning rather than precisely replicated events or specific language. The concepts on which meaning is based are represented in memory as nodes that are associated with other nodes through connecting associations or links.

Procedural knowledge underlies our ability to understand and generate language. Whereas declarative knowledge or factual information may be acquired quickly, procedural knowledge such as language skill is acquired gradually and only with extensive opportunities for practice. Procedural knowledge is represented in memory as production systems, which consist of a "condition" and an "action." The condition expresses a goal statement in an IF clause, and the action expresses a command preceded by THEN. For example, the following production could be used to represent a pluralization rule for Spanish:

IF the goal is to produce the plural of a noun,
and the noun ends in a consonant,
THEN produce the noun + -es.

As goals are satisfied or change for the learner, the IF clause will match different sets of stored conditions and the learner will execute different sets of actions. The rules an individual follows in acquiring a second or foreign language may be linguistic rules, rules for communicative competence, or idiosyncratic rules that emerge out of prior linguistic knowledge or experience in trying to use the new language. Anderson (1980) has shown how production systems can be used to describe grammatical competence, and O'Malley et al. (1986) have used the approach to represent communicative competence.

Anderson identifies three stages that describe the process by which a complex cognitive skill such as language is acquired: (a) a cognitive stage, in which learning is deliberate, rule-based, and often error-laden; (b) an associative stage, in which actions are executed more rapidly and errors begin to diminish; and (c) an autonomous stage, in which actions are performed more fluently and where the original rule governing the

performance may no longer be retained. Thus, as the same procedure is used repeatedly, access to the rules that originally produced the procedure can be lost. O'Malley et al. (1986) suggest that second language listeners process extended oral text by alternating between stages, depending on the difficulty of a particular portion of the text.

Although Anderson does not explicitly describe learning strategies, a number of the mental processes he discusses serve to explain how strategies are represented, how they are learned, and how they influence second language acquisition. O'Malley et al. (1986) indicate that learning strategies are declarative knowledge that may become procedural knowledge through practice. Learning strategies are conscious and deliberate when they are in the cognitive and associative stages of learning, but may no longer be considered strategic in the autonomous stage since the strategies are applied automatically or without awareness (Rabinowitz & Chi, in press). As with other complex cognitive skills, the strategies are acquired only with extensive opportunities for application.

Viewing second or foreign language acquisition as a cognitive skill offers several advantages for research on language learning strategies. Anderson's model provides a comprehensive and well-specified theoretical framework for second language learning and can be adapted to provide a detailed process view of how students acquire and retain a new language. This model can also help to identify and describe the existence and use of specific learning strategies for different types of learners at various stages of their second language acquisition. Finally, a cognitive skill model of second language acquisition can provide guidance in the selection and application of learning strategies in the instruction of second and foreign language students.

Research Questions

Previous studies reporting on learning strategies in second and foreign language acquisition have not had a theoretical foundation to guide the direction of research or to suggest hypotheses about the learning process. This Study of Learning Strategies in Foreign Language Instruction is investigating learning strategies within the theoretical framework described in the previous section. In each of the three studies, the focus is on the mental processes that foreign language students use and can be taught to use to assist comprehension and production of the new language.

In the Descriptive Study, which is the subject of this First Year Report, we are particularly interested in research questions that concern the range and type of learning strategies used by students of Spanish and of Russian as foreign languages at different levels of instruction. Data from this study have provided information related to the following research questions:

- Types of Strategies Used

  What strategies do students use in learning foreign languages? Do foreign language students use metacognitive, cognitive, and social-affective strategies? What is the range and variety of strategies reported?

- Strategy Variation by Language of Study

  Do students of Spanish and of Russian use similar strategies? Do students of one language use strategies as frequently as students of the other language?

- Strategy Variation by Course/Proficiency Level

  Do beginning level foreign language students use the same type of strategies as more advanced students? Do they use strategies as frequently as more advanced students?

CHAPTER II. METHODOLOGY

Three major studies are being conducted: (1) Descriptive Study, where data are gathered by interviewing students in small groups concerning the learning strategies they use in performing various language learning tasks; (2) Longitudinal Study, where data are gathered by interviewing students individually and presenting them with representative language tasks to perform, during which they "think aloud"; and (3) Course Development Study, where teachers identify promising learning strategies students report using and provide their classes with explicit instruction in and opportunities to practice these learning strategies.

The Descriptive Study has been completed and results are presented in this report. The Longitudinal Study is on-going; its methodology is reported in a later section of this chapter (and two methods of data analysis of the think aloud data are presented in Chapter IV), but results will be presented in subsequent reports concerning this study. Planning for the Course Development Study has been initiated at the time of this writing; both its methodology and its results will be presented in subsequent reports.

As stated previously, the study focuses on two languages, Spanish and Russian. This chapter presents the methodology used in the Descriptive and Longitudinal Studies. Generally, the methodology used with Russian students was quite similar to that used with Spanish students; differences are noted where important.

A. METHODOLOGY OF THE DESCRIPTIVE STUDY

The purposes of the Descriptive Study were: (a) to identify the range and type of learning strategies used by students of Russian and Spanish for language learning tasks they typically encounter in their classrooms; and (b) to determine if strategies vary depending on the target language under study or the course level of the student.

Subjects in the Spanish Sub-study. The subjects were 67 high school students enrolled in Spanish classes at one Northern Virginia public school: 31 enrolled in Spanish 1, 21 in Spanish 3, and 15 in Spanish 5/6. Although the high school teachers encouraged students to cooperate in the study, participation was voluntary.

Subjects in the Russian Sub-study. The subjects were 34 students enrolled in Russian classes at an accredited university on the Eastern Seaboard of the United States: 19 enrolled in Russian 1 and 15 enrolled in Russian 3 or 4. Although the Russian professors strongly encouraged students to cooperate in the study, participation was strictly voluntary.

Instruments in the Spanish and Russian Sub-studies. The instruments used to collect data from students in both sub-studies were identical in content and intent, except that the language in question was specifically named. There were 2 instruments: the Learning Strategies Inventory (LSI) and the General Interview Guide.

- The Learning Strategies Inventory (LSI). All students completed the Learning Strategies Inventory (LSI). The LSI contains 48 items describing various things a student might do when learning Spanish or Russian (see Appendix A). It is divided into sections: listening to

the language in class, speaking the language in class, listening and speaking outside of class, writing the language and reading the language. The 48 items relate to different ways of applying a total of 16 learning strategies (see Appendix A for the learning strategies contained in the LSI). The students were asked to respond that the statement was: almost always true of them, usually true, sometimes true, or almost never true of them.

- The General Interview Guide. The General Interview Guide was designed to collect data about learning strategies used with nine language learning activities that typically occur in a foreign language class or in the experience of a foreign language student (see Appendix B). The nine activities were as follows: pronunciation, vocabulary learning, oral/written grammar drills, listening in class reading, written composition, oral presentations, operational (functional) communication, and social communication. The Guide used in the Spanish sub-study included a special question to be asked of upper level students regarding what strategies they felt had helped them to make the transition to a classroom where listening comprehension was more greatly emphasized. This question was included to address a special concern of the Spanish department head. All other questions were the same for both sub-studies.

Procedures. Procedures were virtually the same for both sub-studies, although the setting (high school vs. university) produced certain small variations. The procedures will be discussed in three sections: (a) gaining student cooperation, (b) administration of the LSI, and (c) the general group interview.

Gaining Student Cooperation

Spanish Sub-study. As noted above, a total of 67 students of Spanish participated in the Descriptive Study. The total enrollment in the Spanish classes in question was 82 students: 49 in Spanish 1, 21 in Spanish 3, and 15 in Spanish 5/6. Class time was taken to invite students to participate in the study; all students were given permission slips for their parents to

sign and return to the teacher as indication of their approval. The 67 students who returned permission slips corresponded to the following class levels: 31 in Spanish 1, 21 in Spanish 3 and 15 in Spanish 5/6.

Russian Sub-study. As noted above, a total of 34 students of Russian participated in the Descriptive Study. The total enrollment of the Russian classes in question was 64 students: 37 in Russian and 1 and 27 in Russian 3 and 4. Class time was taken to invite all students to participate in the study; students were given a form on which to indicate times they would find convenient to participate in the Descriptive Interview (see procedures below for a description of this interview). 48 of the 64 students returned the form: 29 in Russian 1 and 19 in Russian 3 and 4. All were scheduled for interviews and given a letter indicating when and where the interview would take place. A total of 34 students actually appeared for their appointment and participated in the General Interview: 19 in Russian 1 and 15 in Russian 3 and 4.

Administration of the LSI

All students in both sub-studies were asked to complete the Learning Strategies Inventory (LSI). Russian students completed the instrument immediately prior to the general group interview. Spanish students were asked by their teachers to complete the LSI several days before participating in the general group interview. In this way, student responses to the LSI were not influenced by group discussion of learning strategy use.

The General Group Interview

As discussed under the Instruments section above, the general group interview in both sub-studies was virtually identical. Students were asked to describe how they approached various language learning tasks such as learning pronunciation or reading in the foreign language. These interviews generally took place in groups of 3-5 students. (With the Russian sub-study, the groups were sometimes as small as an individual student, due to scheduling difficulties.)

All interviews were tape recorded for ease of later analysis. The interviewer used the General Interview Guide (see Appendix B) as the basis for questioning; the typical interview lasted about 45 minutes. Interviews for the Russian sub-study were conducted during the students' spare time across the period of one week. No two groups of Russian students were ever in the same room at the same time. Interviews for the Spanish sub-study were conducted on one day during regular class time, which resulted in several groups being interviewed in the same room simultaneously. At the upper levels (Spanish 3 and 5), students were able to focus adequately on the task and overcome noise distraction. However, for the majority of the Spanish 1 interviews, there was considerable noise from other groups; interviewers noted that students became distracted at times and many of the tapes made of these interviews were difficult to transcribe because the noise level in the classroom obscured student voices.

The same procedures were used in both sub-studies to transcribe the interview tapes. The rater prepared an abbreviated transcript by noting only the learning strategy description (and name, if it was obvious), the

class level and number of students in the group and the learning activity (pronunciation, oral drills, etc). Descriptions of the learning strategy and its use were thoroughly recorded to ensure that later classification of the strategy would be accurate. Each new mention of a strategy or its application was noted, except that affirmation by students of the same strategy initially identified by another student for the same learning task was counted as a single occurrence. Use of the same strategy with a different learning activity was recorded as a new strategy application. In cases where the strategy name was not obvious, or when there was disagreement over a strategy name, a collective decision was made by all project staff. Multiple strategies were recorded whenever no single strategy adequately described the approach used by students. Although the use of multiple strategies would tend to increase the overall number of strategies recorded, the alternative was to fail in representing the richness and imagination with which students combined strategies during language learning. Reliability data on interviews were collected by having an independent rater listen to a tape, develop an abbreviated transcript, and compare results with the initial transcript. For the Spanish interviews, the reliability between raters was .86; for the Russian interviews, the interrater reliability was .88.

Results of the general interviews and the LSI for both sub-studies are reported in the next chapter of this report.

B. METHODOLOGY OF LONGITUDINAL STUDY

The intent of the Longitudinal Study is to follow students across four semesters of language study. During each semester (Spring 86, Fall 86,

Spring 87, and Fall 87), students will meet individually with an interviewer who will present them with representative language learning tasks to perform. The students will be asked to "think aloud" as they work to a solution. The methodology described in this section of the report reflects the approach used during the Spring 86 data collection session. This approach is not expected to change significantly in subsequent sessions.

Each sub-study (Russian and Spanish) followed the same basic procedures in terms of selecting and training the students, and similar questions were asked during the data collection. Differences between the two sub-studies will be noted where relevant.

Subjects. Teachers were asked to classify their students as being effective, average, or ineffective language learners. These designations were made prior to the Descriptive Study. Only those students designated as effective and ineffective language learners were invited to participate in the individual longitudinal sessions. Table 1 shows the total number of effective and ineffective students available in each sub-study, as well as the number from whom "think aloud" data were actually collected. In the Spanish sub-study, the number of students participating in the "think aloud" interview was: 21 students in Spanish 1 (15 effective and 6 ineffective); 12 students in Spanish 3 (8 effective and 4 ineffective); and 7 students in Spanish 5 (3 effective and 4 ineffective). In the Russian sub-study, the number of students was: 7 students in Russian 1 (6 effective and 1 ineffective) and 6 students in Russian 3 or 4 (3 effective and 3 ineffective).

TABLE 1

Precentage of Available Effective and Ineffective
Students of Spanish and Russian Participating in Spring 1986
Think Aloud Sessions

CLASS	Effective Students			Ineffective Students			Total Students		
	Available*	Participating+	% Cooperation	Available*	Participating+	% Cooperation	Available*	Participating+	% Cooperation
Spanish 1	22	15	63.6	14	6	42.9	36	21	58.3
Spanish 3	8	8	100.0	4	4	100.0	12	12	100.0
Spanish 5	4	4	100.0	3	3	100.0	7	7	100.0
Subtotal	34	27	79.4	21	13	61.9	55	40	72.7
Russian 1	10	6	60.0	4	1	25.0	14	7	50.0
Russian 3/4	6	3	50.0	5	3	60.0	11	6	54.5
Subtotal	16	9	56.3	9	4	44.4	25	13	52.0
TOTAL	50	36	72.0	30	17	56.7	80	53	66.3

* Students enrolled in class and designated by the instructor as being effective or ineffective language learners

+ Students who completed a Think Aloud Session

In both sub-studies, participation was strictly voluntary. However, the university Russian students completed the Think Alouds in their free time, while the Spanish students completed the interviews during their normal class period, instead of attending class.

Instruments. The instruments used in the two sub-studies were quite different, so they will be discussed separately.

The Spanish Sub-study Instruments. Five basic instruments were used to collect data from the high school students studying Spanish: two proficiency tests; and three student workbooks and interviewer guides.

o Proficiency Tests. Two proficiency tests (each with an alternate, equivalent form) were developed in order to collect information regarding each student's proficiency in the language as of Spring 1986, the starting point of the Longitudinal Study. The first proficiency test was intended for use with those students enrolled in Spanish 1; the second was intended for those enrolled in Spanish 3 and 5. The material included in each test increases in difficulty so that items currently beyond a student should be within his capability by the time the Longitudinal Study is completed (Fall 87). Thus, a Spanish 1 student taking the Level 1-3 proficiency test in Spring 86 will take the same test in Fall 87, when he or she is enrolled in the first semester of Spanish 3. In this way, increases in a student's proficiency across time can be captured.

As mentioned above, an alternate form of each test was developed so that students would not have to take the same test in each year of the Longitudinal Study. The alternate form (Form B) of both proficiency tests

was designed to be equivalent in difficulty to Form A. Both forms address the same concepts and points of knowledge a student of Spanish in the participating school would typically be required to learn. Each test at each level (Levels 1-3 and Levels 3-5) has the following sub-parts: grammar, reading, fill-in-the-blank (cloze), listening and a dictation. All sub-parts except the cloze section are multiple-choice, providing the students with four options from which to choose. Each test takes roughly 45 minutes to administer and comes with a Test Administrator's Guide. Students work from a test booklet, but mark their answers on a separate Student Answer Sheet.

o Interviewer Guides and Student Workbooks. These instruments were designed to elicit "think aloud" information from students on the mental processes they used during performance of a Spanish language learning task. The student's task was to perform the language learning activity and to report aloud what went through his or her mind while working with the materials. Three separate interviewer guides and student workbooks (Spanish 1, Spanish 3, and Spanish 5) were developed for Spring 86 data collection. Students received the workbook targeted especially for the level of Spanish they were studying. Each workbook contained 5 separate language learning activities designed to match the curriculum of the high school involved in the study. The companion Interviewer Guide provided the interviewer with a script with which to introduce each activity, copies of what the student received in his or her workbook, and probing questions the interviewer was expected to ask to gather data from the student. The probing questions were the same, regardless of the level of the student (i.e., what are you thinking? or how did you figure that out?)

The five activities presented to the students were:

(1) Fill-in-the-blank (5 sentences missing a word of vocabulary emphasized at the student's particular level - the family for Spanish 1, going to the doctor for Spanish 3, and the post office for Spanish 5);

(2) Writing in Spanish (for Spanish 1, writing 3-5 original sentences about a family tree provided in their workbook; for Spanish 3 and 5, writing an original paragraph about a picture in their workbook);

(3) Speaking in Spanish (for Spanish 1, speaking about the student's own family; for Spanish 3, speaking about an interesting trip; for Spanish 5, role playing mailing a package);

(4) Listening (for Spanish 1, a 9-line dialogue; for Spanish 3, an extended monologue; for Spanish 5, a narrative story); and

(5) Reading and Grammar (a different cloze passage for all levels, appropriate in difficulty to the level of the students).

The five activities contained in each workbook were designed to take approximately 50 minutes to complete, the length of one class period.

Russian Sub-study Instruments. Five basic instruments were used to collect data from the university students studying Russian: two reading proficiency tests and three student workbooks and interviewer guides:

o Reading Proficiency Tests. Two reading proficiency tests (each with an alternative, equivalent form) were developed in order to collect information regarding each student's reading proficiency in the language as of Spring 1986, the starting point of the Longitudinal Study. The first proficiency test was intended for use with those students enrolled in Russian 1 and contained 23 items; the second was intended for those enrolled in Russian 3 and 4 and contained 22 items. The tests were specifically designed to determine proficiency as described in the ACTFL

proficiency guidelines (see Appendix C). Test 1 contained items ranging from 0-level proficiency to 2-level proficiency. Test 2 contained items ranging from 1-level proficiency to 3-level proficiency. The goals of the university program are that graduates of the Russian program should achieve at least a 2-level proficiency in reading. In keeping with the goals of the program (giving the students functional proficiency in Russian), all items on these tests were developed around authentic Russian materials (excerpts from Russian newspapers and other publications).

As mentioned above, an alternate form of each test was developed so that students would not have to take the same test in each year of the Longitudinal Study. The alternate forms (Form B) of both reading tests contained items testing at the same difficulty level of the ACTFL scale. All items were multiple choice, providing students with four options from which to choose, and were stated in English. Students were given 30 minutes to complete the test designated for their class level; they worked from a test booklet and marked their answers on a separate Student Answer Sheet.

o Interviewer Guides and Student Workbooks. Three separate interviewer guides and student workbooks (Russian 1, Russian 3, and Russian 4) were developed for Spring 86 data collection. These instruments were designed to elicit "think aloud" information from students on mental processes they used during performance of language learning tasks. The student's task was to perform the language learning activity and to report aloud what went through his or her mind while working with the materials.

Students received the workbook targeted especially for the level of Russian they were studying. Each workbook contained a variety of language learning activities such as grammar, fill in the blank, listening, reading and writing. The companion Interviewer Guide provided the interviewer with a script from which to introduce each activity, copies of what the student received in his or her workbook, and probing questions the interviewer was expected to ask to gather data from the student. The probing questions were the same, regardless of the level of the student (i.e., "Were there any words you didn't understand? Could you figure them out? How did you figure them out?").

The activities presented to the students were

(1) Grammar (2 skeleton sentences presenting subject, verb in its infinitive form, and any direct or indirect objects. The student had to form these "dehydrated" sentences into complete sentences);

(2) Fill in the Blank (2 sentences where a certain aspect of the sentence was missing; four options were presented below and the student had to choose which option would appropriately complete the sentence);

(3) Listening: Monologue (for Russian 1, a monologue about the Pushkin Russian Language Institute; for Russian 3 and 4, a summary of an interview with a famous Russian actress);

(4) Listening: Dialogue (for Russian 1, an excerpt entitled "Eva meets Claus' friends"; for Russian 3 and 4, an excerpt from a story by Korneichuk);

(5) Writing (the same for all levels; students were given a list of 10 topics from which to choose)

(6) Speaking (used only for Russian 3 and 4 students; topic was a role play where student was interviewed on Radio Moscow as an American studying in the Soviet Union); and

(7) Reading (used only as an optional activity for Russian 1 students; Russian 4 students received 2 separate reading passages, one that corresponded to their level and a second that was purposefully beyond their level).

The workbooks contained more activities than most students could complete within the hour allotted for the Think Aloud Sessions. Optional activities (such as reading for Russian 1 students) were included at the end of the workbook, in the event that some students were able to rapidly complete prior activities.

Procedures. Procedures were divided into two sections: student training and actual data collection.

Student Training. Because data were to be collected by asking students to "think aloud" about how they performed various language learning tasks, it was essential to give students: (a) a good understanding of what "thinking aloud" meant, and (b) extensive practice in "thinking aloud" prior to actual data collection. An hour-long training session was designed to train both Russian and Spanish students in the Think Aloud technique; all students participating in the study received this training.

The training involved three stages conducted entirely in English and one final stage using target language materials (either Russian or Spanish, depending on the group of students). The first three stages were: word association, writing, and playing a Think Aloud game. In the word association stage, students were asked to write down the first word that came into their mind when given an oral prompt (i.e., running). The purpose of this stage was to start students focusing on what went through their mind. In the second stage, students were asked to extend this concept to include a larger piece of their mental activity; they were given one minute to write as much as they could of the thoughts that flowed

through their minds. Discussion followed each of these stages. Students were asked to examine the nature of the thoughts they had: Had their thoughts contained visuals? sounds? emotions? memories? Had any of their thoughts surprised them?

In the third stage of the training (conducted still with English materials), students played a board game where, for the first time, they were asked to say aloud what they were thinking. The game was built around questions in seven subject areas: history, math, logic, science, geography, literature, and culture. Students landed on a square designating one of the subject areas, drew a multiple choice question, and "thought aloud" as they attempted to answer the question. (See Appendix D for a list of the questions used in the board game.) Training was conducted in groups of 2-4 students, so that teams could be formed. Scoring of student answers was done by the other students in the training and focused primarily on the completeness of the student's Think Aloud; getting the right answer was not emphasized. In this way, students were reinforced for reporting as completely as possible the thoughts flowing through their minds.

In the final stage of the training, the concept of thinking aloud was applied to target language materials appropriate in difficulty for the specific class in which the students were enrolled. For the Russian sub-study, the materials were grammar (dehydrated sentences of the sort they would later receive as part of actual data collection) and fill-in-the-blank (also similar to what they would receive in the actual Think Aloud sessions). Materials for the Spanish sub-study varied; Spanish 1 students were given a dictation and answered basic questions, thinking

aloud as they answered. Spanish 3 and 5 students also completed a dictation, and listened as well to a pre-recorded monologue in Spanish. The listening passages contained a series of pauses. After each pause one student was asked to say aloud how he or she had made sense of what was heard: whether there were unfamiliar words, what they had not understood, whether images, sounds or memories had occurred to them as they listened. Students in both sub-studies were expressly told that this final stage of the training paralleled what they would be expected to do in the actual data collection sessions.

The training sessions with the Russian students ended with students making appointments to participate in a data collection session. Students in the Spanish study were to be drawn from class at the teacher's discretion; scheduling appointments was not necessary.

Data Collection Sessions. Data collection sessions were conducted with students individually and were tape recorded for ease of later analysis. Sessions in the Spanish sub-study were roughly 50 minutes long. The Russian think aloud sessions ranged from one hour in length to one and a half hours. A typical data collection session contained three stages: warm-up, transition, and verbal report. Each step is described below.

- Warm-up. The warm-up was designed to break to ice between student and interviewer, as well as to gather general background data about the student (i.e., whether the student had ever studied another foreign language). The warm-up took only 2-3 minutes.

- Transition. The transition stage of each session was designed to reacquaint the student with Think Aloud technique and to give him or her an opportunity to practice it prior to working with the target language materials. The transition typically involved a math or logic problem stated in English. The student read the problem and "thought aloud" while working to its

solution. The interviewer then asked the student to evaluate their own Think Aloud for completeness. In other words, did the student feel that what they said captured aloud the thoughts they had had while solving the problem?

- Verbal Report Stage. Once the student had had the opportunity to practice thinking aloud, actual work with target language materials began. Students were guided through the workbook activities by the interviewer and encouraged to relate what they were thinking as they engaged themselves with the materials. General probing questions were: "What are you thinking? Were there words you did not know?" There were probing questions specific to certain activities under study, such as "Are you listening word by word or to groups of words or to whole sentences?" for the listening activities. Interviewers were alert to nonverbal student behaviors such as staring off into space, long silences, or looking back over their work. These behaviors elicited specific probes, such as "I see you're checking your work. What are you looking for?"

Because students in the Spanish sub-study were taken from class in order to complete a think aloud session, there was little incidence of students backing out of the study. However, because participation in the Russian sub-study required students to use their free time to complete a think aloud session, there were more incidences of missed appointments and student withdrawal. Table 1 shows the number of students who agreed to participate in these sessions and the actual number who did.

Two methods of data analysis for the Spring 86 think aloud sessions are presented in Chapter IV of this report. However, due to the time-consuming nature of transcribing the student tapes and the complexity of the data, analyses have not been completed as of this writing. Subsequent reports on this study will detail results of this data collection effort.

CHAPTER III. RESULTS OF THE DESCRIPTIVE STUDY

Presented in this section are the findings from the Descriptive Study. This study concerned strategy use reported retrospectively by students: (1) in interviews, where they were asked about their approach to performing selected receptive and productive language learning tasks (such as pronunciation, grammar drills, listening, and writing); and (2) on the Learning Strategies Inventory (LSI), a 48-item questionnaire focusing on strategy use while reading, writing, listening, or speaking in the foreign language. The principal research questions addressed in this phase of the study were the following:

- What are the range and types of strategies used by students in learning foreign languages?
- Do the strategies used vary depending on the target language under study or the course level of the students?

Group Interviews

A complete description of the group interviews is presented in the methodology section of this report. In summary, students were asked to describe how they perform a variety of language learning tasks (i.e., reading). All interviews were tape recorded. Data analysis of the interviews consisted of listening to the tapes after the sessions were concluded, and coding the strategies mentioned by the students into one of a number of discrete categories. Strategy use was analyzed in reference to the language under study (Russian or Spanish), by task (e.g., vocabulary), and by level of student instruction (beginning, intermediate/advanced). Because the number of small groups interviewed at each level of instruction varied, the average number of strategies per level was used in the

Table 2 shows the average number and percent of metacognitive, cognitive, and social/affective strategies per group, as reported by students of Spanish and Russian. (See Appendix E for a list of learning strategies and their definitions.) Regardless of the level of instruction, students reported using predominantly cognitive strategies (between 55 and 61 percent of their total strategy use). Metacognitive strategies represented about one-third of their strategy use, and social/affective strategies were used only a small proportion of the time (between 5 and 10 percent).

In both the Spanish and Russian sub-studies, student use of cognitive strategies decreased (and metacognitive strategy use increased) as the level of instruction rose. The approximate ratio of cognitive to metacognitive strategy use among beginning students of Spanish was 2.1 to 1, while the same ratio was 1.7 to 1 for intermediate/advanced level students. This shift in the type of strategy used also appears in the data from Russian students, although less markedly (1.7 cognitive to 1 metacognitive for beginners, and 1.5 cognitive to 1 metacognitive for intermediate/advanced students). For all groups, the frequency of strategy use in the social/affective category was minimal; these findings may not be stable with an independent sample.

The data shown in Table 3 indicate the average number and percent of specific metacognitive and social/affective strategies, as reported by Russian and Spanish students at the beginning and intermediate/advanced levels of each language. Table 4 presents the average number and percent of specific cognitive strategies, as reported by the same students. Each of these categories will be discussed below.

analysis. (In other words, the total number of strategies mentioned by students beginning Spanish study, for example, was divided by the number of groups in that category, to yield the values that appear for beginning Spanish students in Tables 2, 3, and 4.)

Presented below are results for the Spanish and the Russian studies. For a number of reasons, comparisons will not be made between languages but, rather, between the beginning and intermediate/advanced levels of each language. The primary reason for the lack of comparison between languages is that the figures presented for Spanish study are based on the strategies students reported using to perform the following activities: vocabulary, reading, and writing. The figures presented for Russian study are based on strategies students reported using with: pronunciation, vocabulary, reading, listening, writing, and making an oral presentation. The unequal number of activities covered in interviews with Spanish and Russian students makes comparisons between languages impossible, other than to observe basic trends in strategy use. As described in the methodology section, the interview situation for Russian and Spanish students was quite different. Spanish students were interviewed in larger groups and in a 50-minute class period, which limited the number of topics that could be covered. In addition, one extra topic was addressed at the request of the participating school. Russian students, on the other hand, were generally interviewed in groups of 1-3 students; no time limit was imposed because the interviews took place outside of class. Thus, more topics could be addressed in the Russian interviews than in the Spanish interviews. Therefore, reported strategy use was tallied for only those activities which were addressed by all interview groups at both the beginning and intermediate/advanced level of the language under study.

TABLE 2

Average Number and Percent of Total Strategy Use
Reported by Students of Spanish and Russian
in the General Group Interviews

Learning Strategy	LANGUAGE OF STUDY											
	SPANISH						RUSSIAN					
	Beginning		Int/Adv		TOTAL		Beginning		Int/Adv		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Metacognitive Strategies	3.6	28.6	5.9	34.8	4.7	32.0	9.3	34.7	11.6	38.5	10.4	36.6
Cognitive Strategies	7.6	60.7	9.8	57.8	8.6	59.1	16.3	60.4	16.7	55.8	16.5	58.0
Social/Affective Strategies	1.3	10.7	1.3	7.4	1.3	8.9	1.3	5.0	1.7	5.8	1.5	5.4
TOTAL	12.4	100.0	16.9	100.0	14.5	100.0	26.9	100.0	30.0	100.0	28.4	100.0

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TABLE 3

Average Number and Percent of
Metacognitive and Social/Affective Strategies
Used by Students of Spanish and Russian,
as Reported in the General Group Interviews

Learning Strategy	LANGUAGE OF STUDY											
	SPANISH						RUSSIAN					
	Beginning		Int/Adv		TOTAL		Beginning		Int/Adv		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
METACOGNITIVE STRATEGIES												
Planning												
Advance Organizer	0.3	9.4	0.9	14.9	0.6	12.6	0.3	3.6	0.7	6.3	0.5	5.0
Directed Attention	0.4	12.5	0.0	0.0	0.2	5.1	0.8	8.9	0.9	7.9	0.9	8.4
Selective Attention	0.6	15.6	1.3	21.3	0.9	19.0	1.7	17.9	1.8	15.8	1.7	16.7
Self-management	0.4	12.5	1.3	21.3	0.8	17.7	2.2	23.2	3.6	31.5	2.9	27.6
Organizational Planning	0.6	15.6	0.8	12.8	0.7	13.9	2.1	22.3	2.0	17.3	2.0	19.7
Delayed Production	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0	0.0	0.0	0.0	0.0*
SUBTOTAL	2.3	65.6	4.1	70.2	3.2	68.4	7.2	76.8	9.1	78.7	8.1	77.8
Monitoring												
Self-monitoring	0.7	19.8	0.6	10.6	0.7	13.9	1.1	11.6	0.9	7.9	1.0	9.6
Evaluation												
Self-evaluation	0.6	15.6	1.1	19.2	0.8	17.7	1.1	11.6	1.6	13.4	1.3	12.6
TOTAL	3.6	100.0	5.9	100.0	4.7	100.0	9.3	100.0	11.6	100.0	10.4	100.0
SOCIAL AFFECTIVE STRATEGIES												
Cooperation	0.7	50.0	0.5	40.0	0.6	45.5	0.3	25.0	0.6	36.8	0.5	31.4
Question for Clarification	0.7	50.0	0.6	50.0	0.7	50.0	0.8	62.5	0.8	47.4	0.8	54.3
Self-talk	0.0	0.0	0.1	10.0	0.1	4.6	0.2	12.5	0.3	15.8	0.2	14.3
TOTAL	1.3	100.0	1.3	100.0	1.3	100.0	1.3	100.0	1.7	100.0	1.5	100.0

*Less than 1%.

Note: Figures reported for Spanish study are based on the following activities: vocabulary, reading, and writing. Figures reported for Russian study are based on: pronunciation, vocabulary, reading, listening, writing, and making an oral presentation in Russian.

Note: Numbers and percentages may vary slightly due to rounding.

Metacognitive Strategy Use. Metacognitive strategies concern three general mental processes: planning, monitoring, and evaluation. Table 3 shows that, regardless of instructional level or language of study, students reported using predominantly planning strategies. Spanish students used planning strategies between 66 and 70 percent of the time they used metacognitive strategies, and Russian students between 77 and 79 percent of the time. The most frequently reported uses of planning strategies by Spanish students at the beginning level were: selective attention (15.6 percent of all metacognitive strategy use) and organizational planning (15.6 percent). For beginning Russian students, the most frequently reported planning strategies were: self-management (23.2 percent), organizational planning (22.3 percent), and selective attention (17.9 percent). The use of self-monitoring (the only monitoring strategy) was more often reported at the beginning levels of language study (18.8 percent) than at the intermediate/advanced level (10.6 percent), while self-evaluation (the only evaluation strategy) was more often reported at the intermediate/advanced level, regardless of language studied.

Social Affective Strategy Use. These types of strategies, which are used by students to allay anxiety or to obtain additional information from a peer or the teacher, represented only a small proportion of strategies used (see Table 2). Table 3 shows that, for Spanish students, cooperation and questioning for clarification were used in roughly the same percentages, with self-talk being reported only by the intermediate/advanced students. The Russian students at both levels of instruction reported using self-talk, but like the Spanish students, its use was much smaller than that of cooperative and questioning for clarification. This latter

strategy, questioning for clarification, was used most frequently by beginning level Russian students (64 percent of all social/affective strategy use); cooperation, apparently, was more useful to the intermediate/advanced Russian students. Nonetheless, the number of social/affective strategies reported in the general interviews was rather small, and the figures are likely to be unstable.

Cognitive Strategy Use. Table 4 presents the average number and percent of cognitive strategies, as reported by Spanish and Russian students. For Spanish students at both levels, translation was the preferred cognitive strategy (29 percent of total cognitive strategy use for beginners, and 24 percent for the intermediate/advanced). In addition, beginning Spanish students reported a high use of transfer (21 percent of all cognitive strategy use), while intermediate/advanced students reported equal use of inferencing and repetition (almost 13 percent). For intermediate/advanced students, transfer followed closely behind as the fourth most frequently used cognitive strategy (11.5 percent).

Russian students at the beginning level showed a similar preference for repetition (12.3 percent of all cognitive strategy use) and translation (11.8 percent). They relied upon transfer slightly less (11.3 percent) and ranked note-taking as their fourth most often used strategy (10.8 percent). Interestingly, note-taking was the preferred cognitive strategy of the intermediate/advanced Russian students (16 percent). Other commonly reported strategies at this upper level were: translation (14 percent), repetition (12 percent), and inferencing (11 percent).

TABLE 4

Average Number and Percent of
Cognitive Strategies Used by Students of Spanish and Russian,
as Reported in the General Group Interviews

Learning Strategy	LANGUAGE OF STUDY											
	SPANISH						RUSSIAN					
	Beginning		Int/Adv		TOTAL		Beginning		Int/Adv		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
COGNITIVE STRATEGIES												
Repetition	0.9	11.8	1.3	12.8	1.1	12.3	2.0	12.3	2.0	12.0	2.0	12.1
Resourcing	0.2	2.9	0.4	3.9	0.3	3.4	1.6	9.7	1.5	8.7	1.5	9.2
Rehearsal	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.6	0.3	1.6	0.4	2.0
Translation	2.2	29.4	2.4	24.4	2.3	26.7	1.9	11.8	2.4	14.1	2.1	12.9
Grouping	0.2	2.9	0.3	2.6	0.2	2.7	0.3	2.1	0.2	1.1	0.3	1.6
Note-taking	0.7	8.8	0.5	5.1	0.6	6.9	1.8	10.8	2.7	16.3	2.2	13.5
Deduction/Induction	0.3	4.4	0.4	3.9	0.4	4.1	1.3	7.7	1.3	7.6	1.3	7.7
Substitution	0.1	1.5	0.4	3.9	0.2	2.7	0.3	1.5	0.4	2.2	0.3	1.9
Imagery	0.3	4.4	0.1	1.3	0.2	2.7	1.2	7.2	0.9	5.4	1.0	6.3
Auditory Representation	0.1	1.5	0.8	7.7	0.4	4.8	1.1	6.7	0.9	5.4	1.0	6.1
Contextualization	0.3	4.4	0.5	5.1	0.4	4.8	0.5	3.1	0.6	3.3	0.5	3.2
Elaboration	0.1	1.5	0.5	5.1	0.3	3.4	0.5	3.1	0.5	2.7	0.5	2.9
Transfer	1.6	20.6	1.1	11.5	1.4	15.7	1.8	11.3	1.2	7.1	1.5	9.2
Inferencing	0.4	5.9	1.3	12.8	0.8	9.6	1.5	9.2	1.9	11.4	1.7	10.3
Summarizing	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.0	0.2	1.1	0.2	1.1
TOTAL	7.6	100.0	9.8	100.0	8.6	100.0	16.3	100.0	16.7	100.0	16.5	100.0

Note: Numbers and percentages may vary slightly due to rounding.
Note: Figures reported here for Spanish study are based on the following activities: vocabulary, reading, and writing. Figures reported for Russian study are based on: pronunciation, vocabulary, reading, listening, writing, and making an oral presentation in Russian.

As can be seen in both language groups, lower levels of study relied most heavily upon repetition, translation, and transfer; in the upper levels, inferencing tended to overtake the use of transfer, while use of repetition and translation continued to be heavy. The Russian students overall reported substantial reliance upon note-taking, with this strategy being mentioned most frequently by upper level Russian students (16.3 percent of all cognitive strategy use).

The Learning Strategies Inventory

The Learning Strategies Inventory (LSI) was administered to all students participating in the general interviews (for a complete description of the instrument, see the Methodology section, or see the LSI, presented in Appendix A). The 48-item questionnaire presents descriptions of strategy use and asks the student to rank the frequency with which he or she uses the strategy (on a 4-point Likert-type scale from "almost never" to "almost always"). Analyses of the LSI involved coding each student's response to each item, tabulating an average frequency of use for each student on the 16 strategies appearing on the LSI, then computing group frequencies for each level of instruction within each language of study. These group frequencies are shown in Table 5.

Of the strategies included in the LSI, students beginning Spanish study reported using selective attention and inferencing with the greatest frequency (2.74 and 2.72, respectively), followed by transfer (2.70), self-monitoring (2.64), and elaboration (2.52). These scores represent

a "sometimes" to "usually" use. The least used strategies among the beginning Spanish students were: contextualization (1.77) and note-taking (2.02). These scores represent an "almost never" to a "sometimes" usage.

At the intermediate/advance level of Spanish study, the most frequently used strategies were: transfer (3.04), inferencing (3.03), selective attention (3.0), and self-monitoring (2.81), indicating that students "usually" apply these strategies. The strategies they reported using least ("almost never" to "sometimes") were: contextualization (1.52), note-taking (1.67), advance organizers (1.87), and cooperation (1.92).

As can be seen in Table 5, the Russian students reported a much higher frequency of use for most strategies. At the beginning level, the most frequently used strategies ("usually") were: selective attention (3.5), questioning for clarification (3.21), inferencing (3.1), elaboration (3.07), transfer (3.04), and self-evaluation (3.03). The only strategy that these students reported using with less than "sometimes" frequency was translation.

Students at the intermediate/advanced level of Russian study reported more strategies used "almost never" to "sometimes". These were: translation (1.88), contextualization (1.92), and cooperative (1.91). Their preferred strategies, "usually" applied, were: selective attention (3.21), inferencing (3.12), note-taking (3.03), elaboration (2.96), and transfer (2.90).

TABLE 5
Average Frequency of Learning Strategy Use*
As Reported on the Learning Strategies Inventory

Learning Strategy	LANGUAGE OF STUDY					
	Spanish			Russian		
	Begin	Int/Adv	TOTAL	Begin	Int/Adv	TOTAL
Metacognitive						
Advance Organizer	2.09	1.87	1.98	2.64	2.28	2.46
Selective Attention	2.74	3.00	2.91	3.50	3.21	3.35
Self-management	2.33	2.31	2.32	2.75	2.76	2.76
Organizational Planning	2.23	2.19	2.20	2.90	2.70	2.80
Self-monitoring	2.64	2.81	2.75	2.70	2.63	2.67
Self-evaluation	2.26	2.18	2.20	3.03	2.82	2.93
Social/Affective						
Cooperation	2.09	1.92	1.98	2.08	1.91	2.00
Question for Clarification	2.45	2.72	2.63	3.21	2.73	2.97
Cognitive						
Resourcing	2.47	2.27	2.33	2.21	2.77	2.49
Translation	2.46	2.02	2.17	1.97	1.88	1.93
Note-taking	2.02	1.67	1.79	2.83	3.03	2.93
Deduction	2.18	2.19	2.19	2.95	2.83	2.89
Contextualization	1.77	1.52	1.60	2.51	1.92	2.21
Elaboration	2.52	2.66	2.61	3.07	2.96	3.01
Transfer	2.70	3.04	2.92	3.04	2.90	2.97
Inferencing	2.72	3.03	2.93	3.10	3.12	3.11

* Students reported frequency of use on a 4-point Likert-type scale with the following meanings: 1=almost never (0-25percent of the time); 2=sometimes (26-50percent of the time); 3=usually (51-75percent of the time); and 4=almost always (76-100percent of the time).

Discussion

The General Interviews revealed a number of interesting factors at work in terms of the strategies students use in learning a foreign language. First, the data show that these students use a wide variety of strategies in order to make sense of and remember the language under study, whether it be Russian or Spanish. These results confirm previous findings from other learning strategies studies that have been done with English as a second language students (O'Malley et al., 1985a).

Secondly, the results suggest that students at all levels of instruction use predominantly cognitive strategies to help them learn the language, and support this approach with the use of metacognitive strategies that help them to plan, monitor, and evaluate their work. Similar patterns of metacognitive strategy use can be seen in both the Spanish and Russian sub-studies: certain strategies tend to be used less at the intermediate/advanced level, while other strategies tend to be used more. For example, in both sub-studies, students reported using advanced organizers, self-management, and self-evaluation more at the upper levels of study, while they used directed attention, organizational planning, and self-monitoring less. In the early stages of learning a language, directing one's attention and monitoring one's production are essentials; these strategies may become less critical as more language is learned. The metacognitive strategies that upper level students reported using indicate that these students are developing an awareness of how to learn the language (self-management), as well as developing a memory base about the language that allows them to self-monitor less and evaluate themselves more. Presumably, the students who have advanced to the upper levels of

study represent a group that is learning the language out of interest and motivation, as opposed to fulfilling requirements for graduation from high school or of distribution at the university level. Their metacognitive strategy use reflects a desire to improve in the language by seeking out new learning situations and reflecting back upon what has been learned.

The importance of focusing one's attention was recognized by all students, regardless of level or language. This finding is evident in the high reported use of selective attention in all groups, both in the general interviews and on the LSI. The only metacognitive strategy that seems not to be used frequently is delayed production (consciously deciding to postpone speaking to learn initially through listening comprehension). Use of this strategy may not be a viable option for students learning a language in a formal classroom, and may be more appropriate in informal learning situations.

Students' use of cognitive strategies seems to be more affected by the language under study and the level of instruction than does their use of metacognitive strategies. One consistent pattern apparent in cognitive strategy use was that both language groups used transfer more at the lower levels, and inferencing more at the upper levels. Spanish students at the beginning level reported a higher reliance upon translation than those at the intermediate/advanced level, while the opposite pattern was evident for Russian students. Spanish students did not report much use of note-taking, while this strategy was important to the Russian students and became more important as their study advanced. With the two latter strategies (translation and note-taking), the findings may be an artifact of the two different student populations interviewed. Spanish

students were enrolled in a high school language program using a traditional instructional approach; most had never studied another language before. The Russian students, on the other hand, were enrolled in a university language program that explicitly discouraged active translation of Russian to English and encouraged the use of such skills as note-taking and inferencing. Many of these students had previously studied other languages and commented in the interviews that they were able to transfer information about those languages as a tool in learning Russian.

While the general interviews were used to identify the range and type of strategies students use to learn a language, the LSI obtained data on the frequency with which certain strategies were used. Generally speaking, the LSI reflected the relative strategy use indicated by students in the general interviews. Strategies such as selective attention, self-management, transfer and inferencing were reported often in the general interviews and marked high in frequency of use on the LSI. The reportedly frequent use of note-taking among Russian students, but not among Spanish students, remained consistent between the interviews and the questionnaire.

One strategy where self-report differed between the general interviews and the LSI was translation. In the interviews, students reported using this strategy with great frequency. On the LSI, translation emerged as being used "sometimes" by Spanish students and "almost never" to "sometimes" by Russian students. This difference may be an artifact of the different self-report situations. In the interview, students were allowed to answer in their own words. A typical use of translation was reported as "... I try and write as much as I can in Russian. Then I write what I don't know

in English. Then I look up that in Russian." On the LSI, on the other hand, a possible way to use translation was specified precisely, such as "I write the assignment first in English, then translate it into Spanish (Russian)" or "I think in English of what I want to say and then I translate it into Spanish (Russian)." The point here is that there are a variety of ways in which a student might translate. While students may very well rely heavily on translation (as they reported in the general interviews), they may not do the precise type of translating that is described on the LSI, thus creating this inconsistency in their two self-reports. (The data from the Longitudinal Study, where students "thought aloud" as they worked with actual language learning tasks, should help to clarify the degree to which students rely upon translation as a means of working with the language.)

In summary the use of most strategies was reported, indicating that foreign language students, even at the beginning levels, bring a wide range of tools to the task of learning. Even with the limitations of retrospective self-reporting, students seemed to be aware of the strategies they used and had little difficulty in discussing their approach.

Effectiveness in Language Learning

Although no data are reported here regarding how effective learners differ from ineffective and average learners, it is interesting to note that all types of students reported using strategies. Previous studies of learning strategies have focused on the "good" language learner, the presumption being that this group of students uses strategies, while "bad" language learners either do not, or have only a limited repertoire of strategies to

use. The data in this study do not bear out this presumption. Ineffective language learners were able to discuss their strategies and reported the same, wide variety of strategies that the effective learners did. In a quantitative sense, the only apparent difference between effective and ineffective learners seems to be that effective learners, of both languages and at all levels, reported greater frequency and greater range of strategy use.

Thus, the general interviews were sufficient to identify that all learners, regardless of effectiveness, know about strategies and use them to a degree. However, because of their retrospective nature, the interviews were not able to discriminate the finer differences in the way effective and ineffective learners apply their strategies. The Longitudinal Study is designed to address this point. In this study, students are given actual language tasks to perform and are asked to "think aloud" as they work. The richness of the think aloud data gathered to date suggests that there is a qualitative difference in how students use their strategies and that this, in large part, discriminates the effective from the ineffective language learner. While analyses of the think aloud data collected in the Spring 1986 semester is still in progress, the next chapter of this report presents a preliminary analysis of (a) one think aloud grammar task, as completed by one more effective and one less effective Russian learner; and (b) one think aloud reading and grammar task, as completed by an effective Spanish learner. The analysis is included in this report as a means of showing, not only the enormous complexity of the data gathered, but that conducting a thorough and painstaking analysis of the think alouds is essential for identifying how effective and ineffective learners differ in their application of strategies.

CHAPTER IV. METHODS OF ANALYSES FOR THINK ALOUD DATA

Presented below are two different methods for analyzing think aloud data collected in the Longitudinal Study. The first method is used to analyze a simple grammar task in a Russian think aloud session. The second is applied to a grammar and reading task in a Spanish think aloud session. Each method has been developed to respond to the types of activities included in the think aloud session, allowing both quantitative and qualitative analyses of the strategies students use to accomplish the task presented.

Method 1: Graphic Analysis

The first method of data analysis presented is useful for short grammar tasks. Using this method, the student's varying focus of attention, application of strategies, and the purposes or outcomes of strategy use can be tracked. Analyses of representative data from two first-year Russian students (one judged to be a highly effective language learner; the other, a less effective learner) are discussed below.

Both of the students were presented with the following task in their Think Aloud Student Workbooks:

THINK ALOUD
Level One

Dehydrated Sentences

Directions: The following sentences are in "dehydrated" form:

* All nouns and pronouns are in the nominative case
* All verbs are listed in the infinitive
* Prepositions and/or relative pronouns may be needed in some cases.

Convert each dehydrated group into a full sentence. Several variants may be possible.

Think Aloud as you do this!

1. **Виктор/ неплохо/ говорить/ русский язык/ но/ он/ мать/ хорошо/ знать/ русский язык.**

Correct Answer: **Виктор неплохо говорит по-русски, но его мать хорошо знает русский язык.**

English Translation: Victor doesn't speak Russian badly, but his mother speaks Russian well.

(This does not appear in the Student Workbook.)

Exhibit 1 represents an analysis of the less effective Russian student's performance of the task, and identifies the learning strategies he reports by thinking aloud while working through the problem. (See Exhibit 2 for the transcription excerpts from this think aloud session).

EXHIBIT 1

Analysis of Think Aloud Data from A Less Effective, First Year Russian Student

Think Aloud #6, Spring 1986

Step	Strategy	Task										Output
		Victor Виктор	pretty well неплохо	speak (inf.) говорить	Russian language русский язык	but но	he он	mother мать	well хорошо	know (inf.) знать	Russian language русский язык.	
1.	Advanced Organizers (Lines 6.1.1-6.1.2)											Reads through task in Russian
2.	Translation (Lines 6.1.3-6.1.4)											Translates task into English
3.	( ) (Line 6.1.5)											
4.	Deduction (Line 6.1.5)											"Present Tense"
	a. Self-Monitoring (Auditory) (Line 6.1.6)											
5.	( ) (Line 6.1.8-6.1.9)											Solves task as:
	TASK ENDS											
	DISCUSSION (Interviewer questions students about a verb decision.)											
6.	Self-Monitoring (Lines 6.1.11-14)											"It could be It happened there."
	(Interviewer asks what the student is thinking.)											
7.	Self-Monitoring (Auditory)											"I'm trying to think how's it whe I speak it"
	a. Elaboration (Lines 6.1.15-17)											
	b. Self-Monitoring (Auditory)/Transfer? (Lines 6.1.17-18)											
	c. Transfer (Lines 6.1.19-20)											goes with
	d. Self-Monitoring (Auditory) (Lines 6.1.20-22) (see also 6.2.1-5)											maybe it's yeah"

Notes: ( ) = No learning strategy indicated
_____ = Focus of student's attention
(O) = Major error in output

EXHIBIT 2

Transcript Excerpt
from
Think Aloud Session #6, Spring 1986
with
A Less Effective, First Year Russian Student

Int: [Explains activity]

6.1.1 Stud: OK [Turns to page] OK, Reading, Viktor neplokho govorit' russkij yazyk no on mat' khorosho znaet
6.1.2 russkij yazyk ‹Виктор неплохо говорить русский язык но он мать хорошо знает
6.1.3 русский язык› OK Victor doesn't speak Russian that well, but his mother speaks
6.1.4 it, speaks Russian well. OK, uhm, Viktor neplokho govo-
6.1.5 ‹Виктор неплохо гово-› OK present tense, now wait a minute,
6.1.6 govo-, govorit ‹гово-, говорит›, yeah, govorit
6.1.7 ‹говорит›, OK, uhm, Viktor neplokho govorit russkij yazyk no eyo mat'
6.1.8 khorosho znaet russkijo yazyk ‹Виктор неплохо говорит русский язык, но её мать
6.1.9 хорошо знает русский язык›. That's it.

Int: OK, you stopped and you kind of fiddled around with that govorit'‹говорить›//
6.1.10 Stud: // govorit' ‹говорить›//
Int: //there, what were you thinking about.
6.1.11 Stud: Well, I was thinking it would either be russkij yazyk ‹русский язык›
6.1.12 or po-russki ‹по-русски› that was going through my mind. I think
6.1.13 it would be russkij yazyk ‹русский язык› It came up here (?:
6.1.14 garbled)
Int: What makes you think that?
6.1.15 Stud: Govorit' po-russki ‹Говорит' по-русски›...Could be po-russki
6.1.16 ‹по-русски›? I'm really confused right now. Govorit'
6.1.17 ‹говорить› I'm trying to think how's it when I speak it. Govorit'
6.1.18 po-russki ‹говорить по-русски›... Ya ne znayu
6.1.19 ‹Я не знаю› Znayu ‹знаю›,
6.1.20 yeah goes with russkij yazyk ‹русский язык› Go-, Govorit'
6.1.21 ‹Го- Говорить› maybe it's po-russki ‹по-русски›,
6.1.22 yeah.
Int: All right. Again, what were you thinking through that, what were you doing in your mind?

6.2.1 Stud: Uh, I was trying, how it sounds right, correct, you know. Ya ne znayu russkij yazyk
6.2.2 ‹Я не знаю русский язык› sounds correct to my ears.
6.2.3 Ya govorit('?) po-russki ‹Я говорить(?) по-русски›
6.2.4 sounds correct, too. Uhm, yeah, sounds bettter that russkij yazyk ‹русский язык›
6.2.5 'cause, you know.

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As shown in Exhibit 1, before attempting to transform the words and phrases into a grammatically acceptable sentence, the student reads through the entire task, word-by-word (Advance Organizer), then translates the task into a logical English sentence, "Victor doesn't speak Russian that well, but his mother speaks it, speaks Russian well" (Translation). Next, the student begins to assemble an acceptable Russian sentence, but halts on the third word /govorit'/ (speak), where the first morpho-syntactic change must be made. He determines the appropriate tense, selects the corresponding verb ending (Deduction), and checks for accuracy (Self-Monitoring). Then, he returns to the beginning of his partially formulated sentence, generates a complete sentence in Russian (with two major errors), and announces his completion of the task, "That's it."

In the discussion thereafter, the interviewer asks the student why he paused before selecting the verb form for /govorit'/ (speak). At this point, the student becomes re-engaged in the task, realizing that he may have made an error (Self-Monitoring). When the interviewer asks him why he thinks that, the student again begins to monitor his output, using Elaboration and Transfer strategies to support his efforts to identify the correct form of the verb complement. ("Russian language" /russkij yazjk/ must be converted to the prepositional phrase "in Russian" /po-russki/). He revises his response and tests it "against his ear" a final time for accuracy (Self-Monitoring).

Exhibit 3 represents data from transcripts of a more effective language learner for the same task. (The transcript excerpts from this session are presented in Exhibit 4.) This student begins the task by briefly skimming over the directions (Advance Organizer), then immediately attends to

EXHIBIT 3.

Analysis of Think Aloud Data
from
A More Effective, First Year Russian Student

THINK ALOUD #1, SPRING 1986

tep	Strategy	Task										Output	Line ID
		Victor Виктор	pretty well неплохо	speak (inf.) говорить	Russian language русский язык	but но	he он	moth-er мать	well хорошо	know (inf.) знать	Russian language русский язык.		
1.	Advance Organizers											Reads directions	1.1.1-
2.	Selective Attention	———		———								Identifies subject and verb	1.1.2-
3.	Deduction	———										Виктор, identifies case	1.1.3-
4.	Deduction		———									хорошо, identifies part of speech	1.1.5-
4.	Deduction			———								говорит, identifies verb conjugation	1.1.6-
6.	( )				———							по-русски	1.1.7-
7.	( )				———	—						хо	1.1.8
8.	Self-Monitoring											Punctuation correction, "I gotta look at this one."	1.1.8-
9.	Inferencing							———	———	———	———	Reads ahead	1.1.9-
	a. Translation							———	———	———	———	Translates phrase	1.1.10
10.	Deduction						———					Identifies options: его, своя	1.2.1
	a. Deduction						———					Verbalizes rule governing choice	1.2.2
	b. Self-Monitoring (Auditory)						———	———				Tests choice: его.мать	1.2.2- See al 1.2.9-
11.	Deduction							———				Identifies case	1.2.3

CONTINUED ON NEXT PAGE....

EXHIBIT 3

Analysis of Think Aloud Data
from
A More Effective, First Year Russian Student

PAGE 2 (of 2)

THINK ALOUD #1, SPRING 1986

Step	Strategy	Task										Output	Line ID
		Victor Виктор	pretty well неплохо	speak (inf.) говорить	Russian language русский язык	but но	he он	mother мать	well хорошо	know (inf.) знать	Russian language русский язык.		
12.	Deduction								———			Identifies part of speech	1.2.4
13.	( )								———	———		хорошо знает	1.2.
14.	( )									———	———	знает русский язык	1.2.
15.	Self-Evaluation						———					Expresses concern about pronoun choice.	1.2.
	Note-taking (Throughout task)											Student wrote sentence while thinking aloud.	
	TASK ENDS												
	DISCUSSION (Interviewer responds to student's concern over pronoun choice.)												
16.	Questioning for Clarification						———					но ?	1.2.7 See a 1.2.9 1

NOTES: ( ) = No Learning Strategy Indicated
_____ = Focus of Student's Attention
= Major Error in Output

IV-7

EXHIBIT 4

Transcript Excerpt
from
Think Aloud Session #1, Spring 1986
with
A More Effective, First Year Russian Student

Int: Go ahead to turn to page 2. That's gonna get us into the grammar stuff and say everything that goes into your mind.

1.1.1 Stud: OK [reading directions] The following sentences are in dehydrated form. All the... OK I already
1.1.2 know all that stuff. Think aloud as you do this. OK * OK. So, Viktor govorit
1.1.3 <Виктор говорит> , OK. [Viktor <Виктор> is gonna be
1.1.4 nominative. Viktor <Виктор> ..Do you want me to write this or just say it?

Int: Whatever you want.

1.1.5 Stud: [Writing] Viktor neplokho <Виктор неплохо> That's an adverb, I guess,
1.1.6 neplokho <неплохо>. Govorit' <говорить>'s gotta be conjugated so second
1.1.7 declension, govorit* <говорит>. Po-russki <По-русски>. Jus
1.1.8 because, I don't know. Like that. No <Но>. Comma no <Но>. OK * OOOOK. I
1.1.9 gottta look at this one. OK. Mat' khorosho znat' russkij yazjk
1.1.10 <Мать хорошо знать русский язык>. OK so it'd have to be * His
1.1.11 mother knows it well so no <Но> Uh, I don't know if it'd be yevo <его>
1.2.1 would it be yevo <его> or svoya <своя>? Uhm. I would say, since
1.2.2 we're in a new sentence. Let's just say yevo <его>. I'm not sure. Yevo mat'
1.2.3 <его мать> Mother stays the same, khorosho <хорошо>,
1.2.4 again an adverb. Khorosho znaet <хорошо знает>, just because, I don't know why,
1.2.5 znaet russkij yazjk <знает русский язык> same like that. That's it. I'm not
1.2.6 sure about this word, but—

Int: The answer they gave me is yevo <его>.

1.2.7 Stud: Yevo <его>?

Int: But you're probably more correct in saying svoj, svoya mat'
<свой, своя мать>—

1.2.7 Stud: That's what I thought.

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solving the problem. He identifies the probable subject and verb (Selective Attention), then methodically analyzes each of the first three elements (Deduction) and generates the first clause of the sentence. Upon reaching the second clause, the student realizes that the nominative pronoun given /on/ (he), preceeding the noun /mat'/ (mother) does not make sense (Self-Monitoring). He, therefore, reads through the rest of the task (Inferencing) and translates the words and phrases into a logical English sentence, "His mother speaks it well" (Translation). With an understanding of the meaning, the student realizes that two possessive pronominal forms for "his" exist in Russian (Deduction), draws upon a rule to govern his decision (Deduction), and tests his choice "against his ear" to monitor correctness (Self-Monitoring). Having come to a decision, the student generates the remainder of the sentence, again analyzing two elements of the second clause (/mat'/ and /khorosho/) (Deduction). The student announces completion of the task, "That's it," with the qualifier that he is not entirely confident of his possessive pronoun choice (Self-Evaluation). When the interviewer offers the form given in the Interviewer's Guide, the student pursues the issue, requesting further explanation and clarification of the rule governing usage of the two available forms (Questioning for Clarification).

A comparison of Exhibit 1 and Exhibit 3 reveals immediate differences between the approaches of the more and less effective Russian learners. First of all, the more effective student uses more than three times as many steps to complete the task as the less effective student (16 steps versus 6 steps). Secondly, while both students employ metacognitive and cognitive strategies throughout task performance, the more effective student exhibits use of all three functions of metacognitive strategies (planning (Exhibit

3: Steps 1 and 2), monitoring (Exhibit 3: Steps 8 and 10b), and evaluating (Exhibit 3: Step 15)), while the less effective student plans (Exhibit 1: Step 1) and monitors once (Exhibit 1: Step 4a), but never evaluates his overall performance. Only when the interviewer's question prompts the less effective student to reflect on his output does he recognize and correct one of the two major grammatical error he made. (The sentence generated by the effective student contained no errors.)

Also worthy of note is the variation in the students' use of cognitive strategies. In his first attempt to perform the task, the less effective student uses only two cognitive strategies, Translation (Exhibit 1: Step 2) and Deduction (Exhibit 1: Step 4). In contrast, the effective student's transcripts reveal ten uses of cognitive strategies, including not only uses of Translation (Exhibit 3: Step 9a) and Deduction (Exhibit 3: Steps 1, 2, 3, 10, 10a, 11 and 12), but also Inferencing (Exhibit 3: Step 9) and Note-taking (Exhibit 3: throughout the task).

Thirdly, the analyses suggest that both less and more effective students combine strategies in a hierarchical manner, using one strategy to support another (e.g., Exhibit 1: Steps 4 and 4a; Exhibit 3: Steps 10, 10a, and 10b). The difference between the two lies in how and when such combinations are used. The more effective student uses combination strategies twice (Exhibit 3: Steps 9 and 10). The less effective student combines strategies once in his first attempt to perform the task (Exhibit 1: Step 4), and again during the discussion following his first attempt when he becomes re-engaged in the task.

Finally, there appears to be a qualitative or attitudinal difference reflected in the two analyses. The less effective student performed the task rather quickly, using, in total, half as many strategies as the more effective learner, who not only employed a wider range of metacognitive and cognitive strategies, but who also used a social-affective strategy (Questioning for Clarification) to use the interview session as an opportunity for learning.

Method 2: Taxonomic Analysis

The second method of analysis has been developed to identify strategy use on an integrative task. Because the sheer volume of language presented in the task prohibits graphic analysis, this approach indicates the frequency and range of strategy use, as well as the hierarchical relationships among strategies.

Exhibit 5 presents the task (Reading and Grammar) given the student. Exhibit 6 presents a verbatim transcript of the student's think aloud while working on this task; the coding the transcript received is handwritten in the margin. The student is at the intermediate level (Spanish 3) and was nominated by her teacher as an effective language learner.

The purpose of this exhibit is to show a taxonomic analysis of the think aloud data. Here, the approach to analysis has been to label strategy occurrences directly onto the transcript, then to tally up all incidences, yielding a raw "strategy score." With this method of analysis, the scores for effective and ineffective learners can be compared to identify differences in (a) the number of strategies they use; (b) the type of

EXHIBIT 5

Reading and Grammar Think Aloud Task
for Spanish 3 Students

Instructions the Students Received:

Below is a paragraph entitled "Un Viaje a Madrid." It describes Juanita's visit to Madrid. Many of the verbs appear in their infinitive form. You are to conjugate these verbs into their action form, if appropriate. Some verbs will be conjugated into the present tense, others into the past, still others into the subjunctive. The first such verb is done for you as an example.

Think Aloud as you work!

Reading and Grammar Passage on which the Students Worked:

Habla Juanita Cotero:

El año pasado yo fui (ir) a Madrid para visitar (visitar) a mi prima Clara. Además de ser mi prima, ella es (ser) buena amiga también. Ella vive (vivir) con su familia en una casa tan enorme que yo pude/podía (poder) tener mi propia alcoba. Durante el día Clara me llevó (llevar) en su coche por toda la ciudad. Ahora yo conozco muy bien a Madrid! Nosotros nos divertimos (divertirse) tanto que yo no quería (querer) irme. Pero, al fin tuve (tener) que regresar a los Estados Unidos. Cuando yo me despidí de ella en el aeropuerto, ella me dió (dar) un abrazo fuerte y me dijo (decir): "Juanita, yo espero que tú puedas (poder) visitarme el año que viene (venir)." ¡Y eso es exactamente lo que yo voy a hacer!

Translation of Passage:

Juanita Cotero is speaking:

Last year I went to Madrid to visit my cousin Clara. Besides being my cousin, she is also a good friend. She lives with her family in a house that's so big, I could have my own room. During the day Clara took me all over the city in her car. Now I know Madrid very well! We had such a good time that I didn't want to leave. But in the end I had to return to the United States. When I said good-bye to her in the airport, she gave me a big hug and told me: "Juanita, I hope that you can visit me next year." And that's exactly what I'm going to do!

EXHIBIT 6

Verbatim Transcript and Coding of a Student's Think Aloud
for the Spanish Reading and Grammar Activity at Level 3

READING AND GRAMMAR IN SPANISH (Level 3: Un Viaje a Madrid)

St: Okay, first I'm reading the types of verbs because I never learned preterite tense until, like, last week and this week, so this is pretty new to me. El ano pasado yo (fui) - see, there's a past tense one - a Madrid para visitar a mi prima Clara. Ademas de ser mi prima ella... okay, I'm trying to think of what this means. Um... more than to be with my... wait a minute. The past, okay, I'm, this doesn't really make sense. Why would it be... oh, okay, now I understand, okay. More than being my cousin, um, she is a good friend tambi- also.

1 Advance Organizer
2. Selective Attention
3 Elaboration
4 Selective Attention
5 Translation
a. Self-Monitor
b. Translation

Int: You figured that out by looking over here?

St: Yeah, cos I didn't, I should have, you know, read through the whole sentence and I didn't. I was going over that and I didn't understand.

6. Self-Evaluation

Int: You went back to the first sentence.

St: Yeah. Um, ella blank con su familia, okay, ella vive con su familia en una casa tan enorme que yo... que...

Int: What are you thinking?

St: I'm trying to think, um, mi propia alcoba. I think that's mi propia... I'm thinking it must be own room, but I don't know. With the family in her house that's so enormous that I can have.. okay, so that makes sense, it is my own room. Um... that I could have my own room. (Mutters under her breath unintelligibly)

7. Inferencing
a. translation
b. self-monitor
c. translation

Int: Fantastic. Pude. (observing the student writing in blank)

St: ...mi, my own room. During the day, Clara, okay, um, okay, that's the, it's a pronoun for me (pointing to the word "me" just before the blank) so, um, she blank and her car for the city.

8. Deduction
9. Translation

Int: What are you thinking?

St: I'm trying to think what, what verb form it's gonna be. Um, I guess it's gonna be, um....

CONTINUED ON NEXT PAGE ....

EXHIBIT 6
(cont.)

Int: What are you thinking?
St: I'm trying to think of the tenses. Um... um... llevo (uncertainly) see, I, I, that's what, I don't like these, I guess it's llevo, yeah, that's what it is. Okay. — 10 Deduction; a. Elaboration; b. Self-monitor
Int: That's right. Llevo.
St: During the day, Clara and me... see, I was thinking "u" because some of them have spelling changes. I don't know, I get them all mixed up. — 11 Deduction
Int: How did you decide that it didn't change?
St: Well, I looked at the "e." I was thinking, I guess I was thinking "u" because some, like to rain, that one, llover, that changes to "eu", or "ue", yeah, "ue", and I don't know, I was just thinking because of that, that it would have, um, would change from "e" to "ue" or something like that but it doesn't. Once I put it down I realized that it doesn't. Um... right now I know Madrid very well! Our... nos... di-vertimos, wait a minute. — a. Transfer; b. Self-Monitor; c. Self-Monitor (visual)
Int: What are you thinking? — 12 Deduction
St: I'm trying, I'm thinking that's present tense, is it really, in this sentence? Tanto que yo no... that I didn't want to... irme. Come home or something? or go, I didn't want to go. I guess it'd have to be past tense, cos we were having so much fun that I didn't want to go. That would make sense. — a. Inference-Gump; b. Self-Monitor; c. Translation; d. Translation; e Deduction/f. Translation/g. Self-Monitor
Int: Hmm-hmm. Are you translating this or are you just translating it for me?
St: Yeah, I'm translating it. Because, I don't know, cos then I can, I get an idea of what, I don't know, what the verb, the tense and stuff. Okay. (pause) This is a weird one too (very softly). — 13 Elaboration
Int: What are you thinking?
St: I'm trying to think back to that page. This is what our lesson is on right now, these, um, the special ones... — 14 Imagery
Int: (reading what student has filled in the blank) Querida...
St: I don't think that's right. Querida is... — 15 Self-Monitor
Int: Why not?

CONTINUED ON NEXT PAGE...

St: Well, I'm thinking, um, quisiera, that's what I was thinking of, querida. See, I don't think the "a" is right, but queride (pronounced queride) que yo no queride irme, that doesn't sound particularly right. Um... but I'm gonna leave it, because, I don't know... — a. Self-Monitor (auditory)

Int: Okay.

St: Que... it wouldn't...

Int: What are you thinking?

St: Would it... que... I'm trying to think of what are the different endings for this. It would have to be "a" (English "a") in the end. I don't know why I think it's queri-, I mean, you know, the beginning, but I don't know, I just think that... see, the "a" doesn't really make any sense at all. So I'm going to change it to the "e." [It has more reasons to be right than the "a" does, but it doesn't sound as right.] I have to change this to past (referring to the previous blank, where she'd written "nos divertimos". She crosses "divertimos" out and writes the same word above.) Um... oh, it's the same thing anyway. — 16. Deduction; 2. Self-Monitor; b. Deduction; c. Self-Monitor (Auditory); 17. Self-Evaluation; a. Induction/(Deduction)

Int: Yeah, it's the same.

St: Yeah, it is. Okay. Just a minute ago I thought subjunctive, cos I saw the que, but, um, it doesn't fit with here, but that reminded me of the que up here, but that one was right, because it didn't fit for subjunctive either. But it just reminded me that some of these could be subjunctive. But in the end, blank que returned to the United States. [I had to return to the United States.] [Okay, tener, that would be tuvo, tuve.] — 18. Deduction; 19. Self-Evaluation; 20. Elaboration; a. Deduction; 21. Directed Attention; 22. Translation; 23. Deduction

Int: Good.

St: Que regresar a los Estados Unidos. [I think the "o" cos it's, all, you know, normal verbs have "o"s on the end in, um, present tense.] When... see, I don't know what that word is. — 24. Deduction

Int: Despidi?

St: Yeah. I think it's despedir. What would be the word for that... cuando blank with her to the... um, airport, she gives me... me di... un abrazo fuerte y me... me... — 25. Inference; a. Translation

Int: What are you thinking?

CONTINUED ON NEXT PAGE...

St: I'm thinking, um, what, is this one of the, um, the irregular ones, but I don't think it is. So this would be just "di." Um, Juanita, I hope that you, [this is gonna be subjunctive, pud..., I've got to think of the subjunctive again...]

b. Deduction
26 Translation
27 Deduction

Int: Resurrect it from the archives.

St: I'm thinking of what is the yo form. If it changes to "ue" again, I think it does. Yo... pud- , puda, poda?...

28 Deduction
a. Self-Monitor (Auditory)

Int: What are you thinking?

St: Uh, I'm trying to think, what, what does it have, does it, okay, It does change to "ue" in the present, but in the subjunctive, I'm trying to remember if it does or not. It could... poda...

b. Self-Monitor (Auditory)

Int: You go on the sound, what sounds good?

St: Yeah, I guess I do that. I think that it's better than the other one, plus I can't think of a rule that would make it stay, you know, why it wouldn't change.

Int: You're absolutely correct. (Student has written "puedas" in the blank.)

St: Okay, good. I hope that, um, she visits me in the year that is coming. El ano que viene (writes in viene)... and this is exactly, is exactly right, um, that she's, that's exactly what I'm going to do... yeah, so, that's exactly what's going to happen or whatever. And this word, I didn't even need that one. (referring to despedi) I guess that means...

29. Translation
a Translation
b. Self-Monitor
30 Elaboration
31 Selective Attention

Int: Despedi?

St: I guess it means leave or something, when I say good-bye to her, in the airport.

32 Inference

Int: Exactly. Say good-bye. Can you think of anything else that went through your mind as you did this?

St: Um... no, I don't know. I guess it's sort of... I was thinking, you know, could I remember all those, you know, the past tense verbs that are irregular, there's so many of them and I get them confused a lot, cos we're just learning them. But, I don't know, I was trying to think, see if I could, you know, figure it out, which ones were and which ones weren't and see if I could do it.

33. Self-Management

(Discussion of not getting preterite in second year; she was in a different school.)

CONTINUED ON NEXT PAGE...

EXHIBIT 6
(continued)

Int: (pointing back to the blank for querer) This one here, its root is irregular. It's q-u-i-s, is the root. Quis.

St: Oh, that's right! So it is like quisiera. 34. Transfer (L2 → L2)

Int: Yeah, exactly.

St: Is that what it is? 35. Questioning for Clarification

Int: No. It's quise.

St: Quise. That's right, yeah. I don't know where I got querida from. 36. Repetition

Int: Querida is like loved one, dear.

St: Yeah. Yeah. I guess, now see, that's something I've heard before, querida. And so I guess that's similar, that's why I got that end. 37. Transfer L2 → L2

Int: Anything else?

St: No.

(end of activity)

strategies they use; and (c) the frequency with which they use one strategy over another. Further, strategies appropriate for this task can be identified and compared with strategies used for other tasks.

Using this student as an example of the taxonomic method of data analysis, we can sum up her strategy use as follows:

Type of Strategy	Strategy Name	Number of Occurrences
Metacognitive	Advance Organizer	1
	Directed Attention	1
	Selective Attention	3
	Self-management	1
	Self-monitoring	15
	Self-evaluation	3
SUBTOTAL		24
Cognitive	Translation	13
	Deduction	15
	Repetition	1
	Transfer	3
	Imagery	1
	Elaboration	5
	Inference	4
SUBTOTAL		42
Social/Affective	Question for Clarification	1
SUBTOTAL		1
TOTAL STRATEGIES USED		67

This type of analysis tells us what strategies this student uses (metacognitive, cognitive, and social/affective) and the relative frequency of each. For example, this student uses metacognitive strategies 36.4 percent of the time in performing this task and clearly is inclined to self-monitor.

In addition, the analysis reveals how the student uses strategies in combination with each other in order to accomplish a larger purpose. For example, in Step 7 she is trying to inference the meaning of the phrase

"mi propia alcoba." In order to do this, she first attempts to translate (Step 7a), then self-monitors to see if her translation makes sense (Steps 7b), and then tries another translation (Step 7c). She apparently decides that her understanding of the phrase is sufficient, because she then fills in the blank and moves on. Other examples of combination strategy use can be seen in Steps 5, 10, 11, 12, 16, 17, 20, 25, 28, and 29. Any of these combinations can be pulled out and depicted graphically, as in Method 1.

Summary

While the analyses and discussion in this chapter reflect only preliminary attempts to interpret data collected in the Longitudinal Study, they indicate the depth and richness of data collected through Think Aloud interviewing techniques, and the level of detail required for meaningful analysis.

CHAPTER V. APPLICATIONS TO THE FOREIGN LANGUAGE CLASSROOM

The outcomes of the Descriptive Study of the project "A Study of Learning Strategies in Foreign Language Instruction" carry direct instructional implications for foreign language teachers. Classroom applications progress in three major steps: (1) identifying learning strategies students are already using; (2) assessing students' learning strategy needs; and (3) planning instruction to improve students' application of learning strategies. Suggestions for teachers regarding each of these steps are presented in this section of the report.

Identifying Students' Learning Strategies

By identifying the learning strategies that their students are already using, teachers can (1) become familiar with the manner in which individual students set about a language learning task, and (2) determine the degree to which students have retained and acted upon suggestions for applying learning strategies that teachers may have provided in the past.

The Descriptive Study used two methods for collecting data on students' learning strategies: group interviews and questionnaires. (See Appendix A for the Learning Strategies Inventory - LSI, and Appendix B for the Group Interview Guide.) The group interview provided information about the range of strategies that students could recall having used, and the LSI questionnaire supplied information about the frequency with which students of various levels of effectiveness reported behaviors that exemplify specific strategies. Both interviews and questionnaires were in English so

that students would not be inhibited in their descriptions of their learning strategies by lack of proficiency in the foreign language. Following are suggestions for ways in which both methods can be used by classroom teachers:

1. In preparation for group interviews, list typical class activities such as: pronunciation practice, vocabulary exercises, grammar exercises, listening comprehension exercises, reading, oral communication activities, writing exercises and activities, etc. For each activity, provide a brief example from sources such as the foreign language textbook or teacher's lesson plan. The activities and examples should be typical of what students actually experience during foreign language classes or while doing out-of-class assignments. (See Group Interview Guide in Appendix B for an example.)

Use the activities and examples to guide interviews with individual students or small groups of not more than five students. An advantage of group interviews is that students can share effective strategies with each other. Describe the activity and example, and ask students what special techniques or tricks they use for that type of language task. Record the answers, either by writing them down or with a tape-recorder.

The list of learning strategy definitions in Appendix E can be used to classify the strategies revealed by students in the interviews. This information will provide insights into the range and variety of strategies used in the class, and the types of strategies used for each different type of activity.

2. A questionnaire developed from remarks in the group interviews can be used to find out the degree to which students engage in behaviors which demonstrate learning strategy use. The advantage of a questionnaire is that the teacher can find out how students are using specific strategies for particular learning tasks. For statements in a questionnaire, students indicate whether the behavior described is one that they engage in almost always, usually, sometimes, or almost never. This information serves to identify which students have already established useful learning strategies, and which students need to increase the frequency with which they use strategies. It is important to assure students that their answers on the questionnaire are for planning purposes and will not be graded.

3. A third method for identifying students' learning strategies is being used in the Longitudinal Study. In this method, individual students are given a foreign language task to perform and asked to "think aloud" as they complete it. The advantage of the "think-aloud" procedure is that students provide information about their mental processing as it is taking place, whereas in retrospective interviews or questionnaires, students report only what they can remember. In a classroom setting, teachers could divide students into small groups and have students take turns "thinking aloud" on different exercises. In this way, more effective students could model their learning processes, and less effective classmates might be able to identify areas in which they could use better strategies.

Assessment of Students' Learning Strategy Needs

After discovering what types of learning strategies students are already using, which strategies they use for different language activities, and how frequently individual students use various strategies, teachers can assess

areas in which learning strategy instruction can be most beneficial. Following are examples of learning strategy needs of students, based on findings from the Descriptive Study.

1. Since students reported using predominantly cognitive strategies, and learning strategy research indicates that a combination of metacognitive with cognitive strategies is more likely to transfer to new tasks, students may benefit from learning how to use metacognitive strategies (planning, monitoring, and evaluation) along with cognitive strategies for every language task.

2. The metacognitive strategies reported were primarily planning strategies. This indicates that instruction on metacognitive strategies should probably focus on self-monitoring for comprehension and production, and on self-evaluation of all language learning tasks.

3. Since students reported using few social affective strategies, and since research indicates that these strategies are powerful aids to learning, students may need instruction and practice in using strategies such as questioning for clarification, cooperation, and self-talk.

4. The Spanish students participating in the Descriptive Study reported using the cognitive strategies of translation, transfer, and repetition with far greater frequency than any other strategies. This type of student could probably benefit from learning strategy instruction and practice in a wider variety of cognitive strategies providing opportunities for these students to expand their repertoire of learning techniques.

5. Teachers may also find it helpful to analyze the appropriateness of strategies used for specific tasks. For example, some students might rely on deduction to such an extent that their participation may be impaired in communicative activities in which fluency is more important than accuracy.

6. Some students may use a strategy for one type of task only, when it could be equally useful for other tasks. For example, a student might make extensive use of inferencing while reading, but be unaware of the utility of this strategy for comprehending an oral text.

7. Some students may try only one strategy on a task, rather than trying a variety of strategies that support and interact with each other. Teachers may point out that when the use of one strategy fails or is inadequate, students should try applying others in order to solve the problem encountered. Modelling of combination strategy use by an effective learner may help illustrate this point.

8. Teachers can also assess whether the strategies their students are currently using are appropriate to their age/developmental level, level of study, and course objectives. For example, in a conversation class or with very young students, deduction may play a minor role because grammatical analysis is not taught.

Planning Instruction to Improve Students' Learning Strategies

There are a number of advantages to be gained by introducing learning strategy instruction into the foreign language classroom. First, students can be made aware of some of the mental processes involved in second

language learning, and this metalinguistic awareness may help students develop and control their own learning ability. Second, teachers can help students extend their repertoire of learning strategies, so that they have a number of strategies to call upon when faced with a challenging task in the foreign language. Third, the teacher can improve the affective climate of the classroom by fostering in their students independence and control over their own learning.

Once teachers have analyzed the learning strategy needs of their students, they can design instruction that will acquaint students with additional learning strategies and provide sufficient practice in their use so that they can be transferred to other language tasks. A form (see Table 6) was developed for the Course Development Study to assist teachers in planning learning strategy instruction for their foreign language classes.

Table 6 indicates that beginning level Spanish students reported using translation and transfer quite frequently (more than 10% of all strategy uses), while less frequent use (between 5% and 10% of strategy uses) was reported for selective attention, organizational planning, self-monitoring, self-evaluation, repetition, note-taking, cooperation, and questioning for clarification. Students reported little or no use (less than 5%) of advance organization, directed attention, self-management, delayed production, resourcing, rehearsal, grouping, deduction/induction, substitution, imagery, auditory representation, contextualization, elaboration, inferencing, summarizing, or self-talk.

Table 6 suggests two types of activities for strategy development that teachers can incorporate into their instruction in different language

TABLE 6

COURSE DEVELOPMENT PLANNING GUIDE

Student Reports of Strategy Use
Beginning Level
Spanish
Spring 1986

	METACOGNITIVE								COGNITIVE															SOCIAL/ AFFECTIVE		
	Advance Organizer	Directed Attention	Selective Attention	Self-Management	Organizational Planning	Delayed Production	Self-Monitoring	Self-Evaluation	Repetition	Resourcing	Rehearsal	Translation	Grouping	Note-Taking	Deduction/Induction	Substitution	Imagery	Auditory Representation	Contextualization	Elaboration	Transfer	Inferencing	Summarizing	Cooperation	Questioning for Clarification	Self-Talk
Pronunciation		*	X	*							X		X					X							*	
Vocabulary		*		*				X					X				X		X					X	*	
Grammar Drills		*	X	*			X								X			X	X						*	
Listening	X	*	X	*	N/A	N/A	X							X						X		X	X	X	*	
Speaking	N/A	*		*	X	*		X			X					X								X	*	X
Reading	X	*	X	*	N/A	N/A	X			X				X						X		X	X	X	*	
Writing	N/A	*		*	X		X	X		X				X	X	X				X				X	*	

X = Suggested strategies to be taught

* = Suggested strategies to be monitored

N/A = Not Applicable

= Students report frequent use

= Students report occasional use

= Students report little or no use

skills for beginning level Spanish students. An asterisk (*) in a strategy/task box indicates strategies which teachers may wish to monitor, and an "X" in a strategy/task box indicates a strategy for which teachers may wish to provide direct instruction. These two types of strategy activities are based on whether or not students are likely to be familiar with a strategy, and the teachability of particular strategies. Thus, directed attention is a strategy with which most students are probably familiar, even those who do not apply it sufficiently. Teachers may be able to improve directed attention in their students by informally checking on the level of their attention, and reminding students of its importance. Self-management, on the other hand, is a strategy which is difficult to teach because it typically occurs outside the classroom when students make an effort to place themselves in situations where learning is enhanced. What the teacher can do is to find what self-management techniques effective students use on their own and encourage other students to try them.

Strategies a teacher might consider teaching for different language learning tasks are indicated in Table 6 with an X. Strategies appropriate for particular tasks and for instructional objectives of the course should be selected, because not all strategies are equally useful for all language learning. For example, repetition may be appropriate for pronunciation exercises or for grammar drills in an audiolingual classroom, whereas substitution and cooperation would be more appropriate strategies for speaking activities in a communicatively oriented classroom. Depending on their instructional approach or the proficiency level of students, teachers may also wish to discourage use of certain strategies, such as translation.

Charts similar to Table 6 will be provided to teachers participating in the Course Development Study so that they can select the strategies they wish to teach their students to use. Sample activities to train strategies on each language task indicated will be provided to participating teachers to suggest practical ideas for incorporating learning strategy instruction into their foreign language classes. A description of these sample training activities will be included in the Second Year Report of this study.

Conclusion

This section of the First Year Report on "A Study of Learning Strategies in Foreign Language Instruction" has suggested a number of ways in which the findings of the Descriptive Study can be used by teachers. The classroom applications include ways in which teachers can identify the learning strategies their students are already using, how learning strategy identification can be used to assess students' needs for learning strategy instruction, and a plan for improving students' learning strategies through classroom instruction.

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APPENDIX A

Learning Strategies Inventory (LSI)

LSI Strategy Interpretation Key

NAME: _____ Russian: ____ Date: _____

LEARNING RUSSIAN

Instructions

We want to ask about what you do when learning Russian. Students sometimes have special ways of studying, speaking to others, or listening that help them in learning another language. We want to know if you do some of these things as you learn Russian.

On the following pages you will find statements about learning Russian. Please read each statement. Then circle one letter (A, U, S, or N) that tells if the statement is:

A.	Almost **Always** true of you	[76-100% of the time]
U.	**Usually** true of you	[51-75% of the time]
S.	**Sometimes** true of you	[26-50% of the time]
N.	Almost **Never** true of you	[0-25% of the time].

There are no right or wrong answers. There are only answers that describe what you do. Try to rate yourself on what you actually do when learning Russian.

Example

This example will show how to mark the questions on the following pages. Read the example below and draw a circle around the letter that tells how often you do the behavior described.

Almost Always	Usually	Sometimes	Almost Never	
A	U	S	N	1. I write down any new words, phrases or rules my teacher says.

If you almost always write down new words your teacher says, circle the letter A. If you usually write down new words, circle the letter U. Similarly, if you sometimes do this, circle the letter S, and if you almost never do this, you would circle the letter N.

A short paragraph at the top of each page describes the scenario in which each statement occurs (listening, speaking, writing, or reading).

Listening in Class

Scenario: In a typical class period, your teacher uses Russian to: give directions, explain new material or review old material, and to ask the class questions.

Remember to draw a circle around the letter that tells how often you <u>actually do</u> what is described in each statement below.

Almost Always / Usually / Sometimes / Almost Never

Note-taking
A U S N 1. I write down any new words, phrases or rules my teacher says so I'll be sure to remember them.

Q for Clar
A U S N 2. I ask the teacher questions when I don't understand what he or she is saying.

Transfer
A U S N 3. When I hear a new Russian word that sounds like an English word, I assume it has a similar meaning.

Translation
A U S N 4. I find myself translating what the teacher says back into English so I can understand.

Deduction
A U S N 5. When listening to the teacher, I apply grammar rules to help myself understand.

Contextualization
A U S N 6. When I hear a new word, I think of a sentence in which I might use it later.

Cooperation
A U S N 7. When I don't understand what the teacher says, I get help from a classmate.

Elaboration
A U S N 8. I try to relate what I'm hearing to my own experiences or to information I already know.

Inferencing
A U S N 9. I guess at the meaning of unfamiliar words by using my knowledge of prefixes and suffixes.

Selective Attention
A U S N 10. I pay more attention to some words and phrases than to others when the teacher is talking in Russian.

Speaking in Class

Scenario: The teacher requires class participation. This means that you have to speak Russian in class, including asking and answering questions, participating in oral drills, reading aloud and perhaps giving a short oral presentation.

Remember to draw a circle around the letter that tells how often you <u>actually do</u> what is described in each statement below.

Almost Always / Usually / Sometimes / Almost Never

Organizational Planning
A U S N 1. When the teacher calls on me in class, I plan my answer in my head before I say a word.

Self-monitoring
A U S N 2. I listen carefully to what I say and correct myself when I make a mistake.

Cooperation
A U S N 3. If I have to give a talk to the class, I give it to a friend first so he or she can tell me how it sounds.

Translation
A U S N 4. I think in English of what I want to say and then I translate it into Russian.

Reversed Self-monitoring
A U S N 5. When I speak, I am generally unaware of any mistakes I might be making.

Deduction
A U S N 6. I consciously apply the rules of grammar when I speak Russian.

Self-management
A U S N 7. I volunteer answers in class so I can practice using Russian.

Self-management
A U S N 8. I try to answer all questions mentally, even when the teacher is addressing someone else.

Contextualization
A U S N 9. When I learn a new word, I say it in a sentence as soon as possible.

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Listening and Speaking Outside of Class

Scenario: You have an opportunity to speak Russian outside of class. For example, you meet several native speakers.

Remember to draw a circle around the letter that tells how often you actually do what is described in each statement below.

Almost Always / Usually / Sometimes / Almost Never

Selective attention

A U S N 1. I listen especially for words or phrases that I already know to help me understand what is going on in a conversation.

Transfer

A U S N 2. I talk about the same sorts of things in Russian that I talk about in English.

Q for Clarification

A U S N 3. I ask native speakers the correct way to say things.

Self-management

A U S N 4. I try to talk with native speakers and keep the conversation going, because I get more practice that way.

Inferencing

A U S N 5. If I don't completely understand what the other person says to me, I think about the words I did understand and try to guess what he or she might be saying.

Elaboration

A U S N 6. I relate the Russian I hear in conversations to what I've learned in class.

Q for Clarification

A U S N 7. If I don't understand what the other person says to me, I ask them to speak more slowly or to say it a different way.

Organizational Planning

A U S N 8. When I know I'm going to be around native speakers, I plan a few things to say.

Self-evaluation

A U S N 9. I go home afterwards and think about what I said to see if I made any mistakes.

Writing in Russian

Scenario: The teacher has assigned a short composition or paragraph to be written entirely in Russian. This might be to write a report or to describe a picture or a personal experience.

Remember to draw a circle around the letter that tells how often you actually do what is described in each statement below.

Almost Always / Usually / Sometimes / Almost Never

Transfer
A U S N 1. I use what I know about writing in English (structure, organization, etc.) to help myself write in Russian.

Translation
A U S N 2. I write the assignment first in English, then translate it into Russian.

Deduction
A U S N 3. I consciously use grammatical rules when I write in Russian.

Cooperation
A U S N 4. For accuracy, I ask a friend to read over what I've written.

Resourcing
A U S N 5. I use a monolingual (Rus-Rus) dictionary or other Russian reference materials when I write in Russian.

Resourcing
A U S N 6. I use my textbook and dictionary to look up spelling, verb conjugations, and gender agreement, etc.

Self-evaluation
A U S N 7. I carefully reread what I've written to make sure there are no mistakes.

Organiz Planning
A U S N 8. Before writing, I make a plan or outline of what I want to say

Reversed Self-monitoring
A U S N 9. While writing a first draft, I try to get all my ideas down instead of worrying about spelling and grammar.

Reading Russian

Scenario: The teacher assigns a reading selection for homework. This may be a short story, an article from a newspaper, or a cultural passage.

Remember to draw a circle around the letter that tells how often you actually do what is described in each statement below.

Almost Always / Usually / Sometimes / Almost Never

Note-taking
A U S N 1. I take notes when I read, listing the new words or phrases I find in the passage.

Selective Attention
A U S N 2. I scan for special words, phrases or information to get the most important points when I read.

Inferencing
A U S N 3. I try to guess the meaning of unfamiliar words by looking at the words in the rest of the sentence.

Adv. Organizer
A U S N 4. I get the major ideas of a reading selection by checking the comprehension questions before I begin reading.

Adv. Organizer
A U S N 5. I first skim the material I must read to get the main idea and concepts.

Self-management
A U S N 6. I practice my reading skills by trying to read extra materials in Russian (such as newspapers, magazines, ads, etc.).

Contextualization
A U S N 7. When I read new words, I think of what other situations they might be used in.

Elaboration
A U S N 8. I try to relate what I'm reading to my own experiences or to material I already know.

Resourcing
A U S N 9. I use a monolingual dictionary (Rus-Rus) to understand additional meanings of the words I read.

Self-evaluation
A U S N 10. After I finish reading, I check my understanding by seeing if I can remember the main ideas of the passage.

Transfer
A U S N 11. Recognizing cognates helps my reading comprehension.

LSI Strategy Interpretation Key

LSI Strategy Name	Strategy Type	Strategy Definition	Page/Item No.
Advance Organization	Metacognitive	Previewing the main ideas and concepts of the material to be learned, often by skimming the text for the organizing principle.	5 - 4 5 - 5
Organizational Planning	Metacognitive	Planning the parts, sequence, main ideas, or language functions to be expressed orally or in writing.	2 - 1 3 - 8 4 - 8
Selective Attention	Metacognitive	Deciding in advance to attend to specific aspects of input, often by scanning for key words, concepts, and/or linguistic markers.	1 - 10 3 - 1 5 - 2
Self-monitoring	Metacognitive	Checking one's comprehension during listening or reading, or checking the accuracy and/or appropriateness of one's oral or written production while it is taking place.	2 - 2 2 - 5* 4 - 9*
Self-evaluation	Metacognitive	Judging how well one has accomplished a learning activity after it has been completed.	3 - 9 4 - 7 5 - 10
Self-management	Metacognitive	Understanding the conditions that help one learn and arranging for the presence of those conditions.	2 - 7 2 - 8 3 - 4 5 - 6
Questioning for Clarification	Social Affective	Eliciting from a teacher or peer additional explanation, rephrasing, examples, or verification.	1 - 2 3 - 3 3 - 7
Cooperation	Social Affective	Working together with peers to solve a problem, pool information, check a learning task, model a language activity, or get feedback on oral or written performance.	1 - 7 2 - 3 4 - 4

* Reversed Items

LSI Strategy Interpretation Key

LSI Strategy Name	Strategy Type	Strategy Definition	Page/Item No.
Resourcing	Cognitive	Using target language reference materials such as dictionaries, encyclopedias, or textbooks.	4 - 5 4 - 6 5 - 9
Translation	Cognitive	Using the first language as a base for understanding and/or producing the second language.	1 - 4 2 - 4 4 - 2
Note-taking	Cognitive	Writing down key words and concepts in abbreviated verbal, graphic, or numerical form during a listening or reading activity.	1 - 1 5 - 1
Deduction/Induction	Cognitive	Applying rules to understand or produce the second language, or making up rules based on language analysis.	1 - 5 2 - 6 4 - 3
Contextualization	Cognitive	Assisting comprehension or recall by placing a word or phrase in a meaningful language sequence or situational context.	1 - 6 2 - 9 5 - 7
Elaboration	Cognitive	Relating new information to prior knowledge, relating different parts of new information to each other, or making meaningful personal associations to the new information.	1 - 8 3 - 6 5 - 8
Transfer	Cognitive	Using previous linguistic knowledge or prior skills to assist comprehension or production.	1 - 3 3 - 2 4 - 1 5 - 11
Inferencing	Cognitive	Using information in an oral or written text to guess meanings, predict outcomes, or complete missing parts.	1 - 9 3 - 5 5 - 3

* Reversed Items

LSI Strategy Interpretation Key

SCORING KEY FOR ALL ITEMS

Almost Always	= 4
Usually	= 3
Sometimes	= 2
Almost Never	= 1

unless item is reversed.

Reversed items are scored:

Almost Always	= 1
Usually	= 2
Sometimes	= 3
Almost Never	= 4

APPENDIX B

Foreign Language Learning Strategies
Interview Guide

SPANISH INTERVIEW GUIDE*

1-- Pronunciation

Your teacher pronounces several words or phrases. You must repeat what your teacher says. You have to imitate her pronunciation as well as you can.

What do you do to copy the teacher's pronunciation?
How do you remember the pronunciation later?

2-- Vocabulary Learning

You have to learn the meanins of 15 new vocabulary words.

Do you have any special tricks to help you learn and remember the new words and their meanings?

3-- Oral and Written Drills; Grammar Exercises

Your teacher models some sentences and you have to change the sentences in some way (such as changing verb tenses, making a statement into a question, etc.) and then say the new sentence.

Do you have any special tricks or techniques that help you understand the model sentence and produce the correct response?

If the grammar drills are to be done in writing, what do you do that helps you get the right answers on the written exercise?

4-- Listening to the Teacher Speak Spanish

Your teacher speaks to you in Spanish, explaining grammar rules, making conversation, giving you directions and assignments. There are several words you do not know in what she says. You have to guess at the meaning of these words.

How do you figure out the meanings of the new words? Do you have special tricks or ways that help you understand what the teacher says in Spanish?

What's your general approach to listening to Spanish?

What do you do if you don't understand the Spanish you hear?

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*This guide refers to Spanish study. The Russian interview guide was virtually identical; the only question appearing here that was not used with the Russian students is on the next page, enclosed in the box.

Special Question for Spanish 3 and Spanish 5 students: (Period 1 & Period 5)

** Making the Transition to a Class that Concentrates on Listening

In your first years of Spanish study, you may have had a teacher who emphasized vocabulary, grammar or reading. Then you switch to a teacher who puts a lot of emphasis on speaking to you in Spanish. You have to learn how to listen to the language and understand what is being said to you, much more than you did in your first years of Spanish study.

Has this been your experience here at Yorktown?

Did you find this transition difficult in the beginning? What did you do to help yourself make the transition and understand what was being said to you?

What advice would you give to a student who had to make the transition from a class not emphasizing listening to Spanish to a class where listening is more key?

Do you find listening to Spanish any easier now than in the beginning? What tricks or techniques helped you the most in learning to understand spoken Spanish?

5-- Reading Comprehension

You have to read a short story or perhaps a newspaper article that contains some new words. Then you have to answer some questions on the reading passage.

As you are reading, what do you do that helps you to understand the meaning of the reading passage? Describe your general reading approach.

As you are reading, what do you do when you come to a new word?

What do you do that helps you answer the comprehension questions? Do you ever read these <u>before</u> you read the passage? If so, why?

6-- Written Composition in Spanish

Your teacher gives you the assignment of writing a few paragraphs in Spanish, perhaps on a personal topic or describing a picture.

Do you do anything before you start to write? What? How does this help you?

As you are writing, what helps you to write better? Describe your general approach to writing in Spanish.

Do you do anything after you have written? What?

7-- Student Oral Presentation

You have to give an oral presentation in Spanish to the class, such as a book report or an account of something you have done.

How do you prepare for the oral presentation?

What helps you to present the report well?

What advice would you give a Spanish student on how to give a good oral presentation in Spanish?

8-- Operational (Functional) Communication in Spanish

Your teacher gives you a practical situation to perform in Spanish, such as ordering a meal in a Spanish restaurant, ordering a plane ticket, or asking for directions in Spanish.

Have you ever had to do a task like this? (If no, skip this question.)

Do you have any special tricks that help you prepare for the task <u>before</u> you actually have to do it?

Do you have any special tricks that help you complete the task using appropriate Spanish?

What do you do to help yourself speak? What do you do if the person to whom you're speaking does not understand you?

What do you do if you do not understand what the person says to <u>you</u>?

9-- Communication in a Social Situation

You encounter a few native speakers of Spanish and have the opportunity to talk with them. You must listen to what they say, understand the meaning, and speak to them as intelligently and appropriately as possible.

How often have you had to do this? (If the answer is never, skip this section)

What do you do that helps you understand the Spanish you hear?

What do you do that helps you remember new words or phrases?

What do you do that helps you to talk?

What do you do if you don't understand what the native speakers say?

What do you do if the native speakers don't understand you?

APPENDIX C

ACTFL
Proficiency Guidelines
for Reading

ACTFL PROFICIENCY GUIDELINES

The 1986 proficiency guidelines represent a hierarchy of global characterizations of integrated performance in speaking, listening, reading and writing. Each description is a representative, not an exhaustive, sample of a particular range of ability, and each level subsumes all previous levels, moving from simple to complex in an "all-before-and-more" fashion.

Because these guidelines identify stages of proficiency, as opposed to achievement, they are not intended to measure what an individual has achieved through specific classroom instruction but rather to allow assessment of what an individual can and cannot do, regardless of where, when, or how the language has been learned or acquired; thus, the words "learned" and "acquired" are used in the broadest sense. These guidelines are not based on a particular linguistic theory or pedagogical method, since the guidelines are proficiency-based, as opposed to achievement-based, and are intended to be used for global assessment.

The 1986 guidelines should not be considered the definitive version, since the construction and utilization of language proficiency guidelines is a dynamic, interactive process. The academic sector, like the government sector, will continue to refine and update the criteria periodically to reflect the needs of the users and the advances of the profession. In this vein, ACTFL owes a continuing debt to the creators of the 1982 provisional proficiency guidelines and, of course, to the members of the Interagency Language Roundtable Testing Committee, the creators of the government's Language Skill Level Descriptions.

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Generic Descriptions-Reading

These guidelines assume all reading texts to be authentic and legible.

Novice-Low	Able occasionally to identify isolated words and/or major phrases when strongly supported by context.
Novice-Mid	Able to recognize the symbols of an alphabetic and/or syllabic writing system and/or a limited number of characters in a system that uses characters. The reader can identify an increasing number of highly contextualized words and/or phrases including cognates and borrowed words, where appropriate. Material understood rarely exceeds a single phrase at a time, and rereading may be required.
Novice-High	Has sufficient control of the writing system to interpret written language in areas of practical need. Where vocabulary has been learned, can read for instructional and directional purposes standardized messages, phrases or expressions, such as some items on menus, schedules, timetables, maps, and signs. At times, but not on a consistent basis, the Novice-High level reader may be able to derive meaning from material at a slightly higher level where context and/or extralinguistic background knowledge are supportive.
Intermediate-Low	Able to understand main ideas and/or some facts from the simplest connected texts dealing with basic personal and social needs. Such texts are linguistically noncomplex and have a clear underlying internal structure, for example chronological sequencing. They impart basic information about which the reader has to make only minimal suppositions or to which the reader brings personal interest and/or knowledge. Examples include messages with social purposes or information for the widest possible audience, such as public announcements and short, straightforward instructions dealing with public life. Some misunderstandings will occur.
Intermediate-Mid	Able to read consistently with increased understanding simple connected texts dealing with a variety of basic and social needs. Such texts are still linguistically noncomplex and have a clear underlying internal structure. They impart basic information about which the reader has to make minimal suppositions and to which the reader brings personal interest and/or knowledge. Examples may include short, straightforward descriptions of persons, places, and things written for a wide audience.
Intermediate—High	Able to read consistently with full understanding simple connected texts dealing with basic personal and social needs about which the reader has personal interest and/or knowledge. Can get some main ideas and information from texts at the next higher level featuring description and narration. Structural complexity may interfere with comprehension; for example, basic grammatical relations may be misinterpreted and temporal references may rely primarily on lexical items. Has some difficulty with the cohesive factors in discourse, such as matching pronouns with referents. While texts do not differ significantly from those at the Advanced level, comprehension is less consistent. May have to read material several times for understanding.

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Advanced	Able to read somewhat longer prose of several paragraphs in length, particularly if presented with a clear underlying structure. The prose is predominantly in familar sentence patterns. Reader gets the main ideas and facts and misses some details. Comprehension derives not only from situational and subject matter knowledge but from increasing control of the language. Texts at this level include descriptions and narrations such as simple short stories, news items, bibliographical information, social notices, personal correspondence, routinized business letters and simple technical material written for the general reader.
Advanced-Plus	Able to follow essential points of written discourse at the Superior level in areas of special interest or knowledge. Able to understand parts of texts which are conceptually abstract and linguistically complex, and/or texts which treat unfamiliar topics and situations, as well as some texts which involve aspects of target-language culture. Able to comprehend the facts to make appropriate inferences. An emerging awareness of the aesthetic properties of language and of its literary styles permits comprehension of a wider variety of texts, including literary. Misunderstandings may occur.
Superior	Able to read with almost complete comprehension and at normal speed expository prose on unfamiliar subjects and a variety of literary texts. Reading ability is not dependent on subject matter knowledge, although the reader is not expected to comprehend thoroughly texts which are highly dependent on knowledge of the target culture. Reads easily for pleasure. Superior-level texts feature hypotheses, argumentation and supported opinions and include grammatical patterns and vocabulary ordinarily encountered in academic/professional reading. At this level, due to the control of general vocabulary and structure, the reader is almost always able to match the meanings derived from extralinguistic knowledge with meanings derived from knowledge of the language, allowing for smooth and efficient reading of diverse texts. Occasional misunderstandings may still occur; for example, the reader may experience some difficulty with unusually complex structures and low-frequency idioms. At the Superior level the reader can match strategies, top-down or bottom-up, which are most appropriate to the text. (Top-down strategies rely on real-world knowledge and prediction based on genre and organizational scheme of the text. Bottom-up strategies rely on actual linguistic knowledge.) Material at this level will include a variety of literary texts, editorials, correspondence, general reports and technical material in professional fields. Rereading is rarely necessary, and misreading is rare.
Distinguished	Able to read fluently and accurately most styles and forms of the language pertinent to academic and professional needs. Able to relate inferences in the text to real-world knowledge and understand almost all sociolinguistic and cultural references by processing language from within the cultural framework. Able to understand a writer's use of nuance and subtlety. Can readily follow unpredictable turns of thought and author intent in such materials as sophisticated editorials, specialized journal articles, and literary texts such as novels, plays, poems, as well as in any subject matter area directed to the general reader.

APPENDIX D

Questions Used
in the
Think Aloud Training Game

Literature Questions

1. Often read as a children's classic, it is in reality a scathing indictment of human meanness and greed. In its four books, the Lilliputians are deranged and the Yahoos obscene.

   a. Tom Jones
   b. David Copperfield
   c. The Pilgrim's Progress
   d. Gulliver's Travels
   e. Alice in Wonderland

2. Nature and Nature's laws lay hid in the night;
   God said: Let Newton be! and all was light.

   The lines above were written by:

   a. Geoffrey Chaucer
   b. Alexander Pope
   c. William Blake
   d. Robert Frost
   e. T.S. Eliot

3. A 20th century novel which made the public aware of the plight of migrant laborers is...

   a. East of Eden
   b. To a God Unknown
   c. Cannery Row
   d. The Grapes of Wrath
   e. Tortilla Flat

4. The Romantic Period of literature gave birth to a special kind of horror story, the...

   a. pastoral romance
   b. epic
   c. vignette
   d. Gothic novel
   e. dramatic monologue

5. What is commonly called the "song book" of the Bible?

a. Proverbs
b. Song of Deborah
c. Ecclesiastes
d. The Psalms
e. Daniel

6. The name Walden is associated especially with...

a. Emerson
b. Hawthorne
c. Franklin
d. Alcott
e. Thoreau

7. War is used in Orwell's 1984 society for all of the following purposes EXCEPT...

a. limiting the relative power of each state through repeated military realignments
b. assuring the loyalty of party members and the solidarity of the citizenry
c. gaining permanent control of the uncommitted areas, their resources, and populations
d. as a means of suppressing the population and destroying the excess products resulting from advanced technology
e. continuing the existent power structure

8. Keats "foster-child of silence and slow time" is...

a. an urn
b. a bust
c. a manuscript
d. a portrait

9. "Here's to my love! O true apothecary!
Thy drugs are quick. Thus, with a kiss I die,"
were the last words of...

a. Juliet
b. Romeo
c. Antony
d. Cleopatra

10. According to legend, when King Arthur died, his sword Excalibur...

a. was bequeathed to Sir Galahad
b. was plunged back into the stone from which he had drawn it
c. was buried with him
d. was thrown into the water where a hand reached up and drew it down

Culture Questions

1. The instrument with the stablest pitch and therefore the one asked to "sound your A" for all other players is the...

a. piano
b. first violin
c. first oboe
d. clarinet
e. trumpet

2. The "licorice stick" reached the peak of its popularity with band leader Benny Goodman. The "licorice stick" is a ...

a. piccolo
b. flute
c. trombone
d. trumpet
e. clarinet

3. Frank Lloyd Wright's basic role in architecture was...

a. to build a structure that was inexpensive
b. to use a minimum of materials
c. to build a structure in harmony with the past
d. to build a structure as if it grew out of the ground
e. to build a structure that overpowers man and nature

4. The hit musical by Stephen Sondheim and Leonard Bernstein called West Side Story was based loosely on...

a. Dryden's All for Love
b. Marlowe's Dr. Faustus
c. Shakespeare's Romeo and Juliet
d. Hawthorne's The Scarlet Letter
e. Whitman's Leaves of Grass

5. "Fear not, for behold I bring you good tidings of great joy, which shall be to all people. For unto you is born this day in the City of David a Saviour, which is Christ the Lord."

The above quotation is from the Book of...

a. Peter
b. Mark
c. John
d. Luke
e. Revelations

6. Who said "These are the times that try men's souls"?

a. Thomas Paine
b. Thomas Jefferson
c. Abraham Lincoln
d. George Washington
e. John F. Kennedy

7. Who was largely responsible for writing the Declaration of Independence?

a. Benjamin Franklin
b. Thomas Jefferson
c. George Washington
d. Samuel Johnson
e. John Adams

8. The experiences of a young apprentice to a silversmith during the early days of the American revolution are described in the novel...

a. Oliver Wiswell
b. Johnny Tremain
c. The American
d. The Tree of Liberty
e. Poor Richard's Almanac

9 The "lead" of a news story is...

a. the headline
b. the by-line
c. the first sentences
d. the sub-head breaking up a lengthy story
e. the author

10. "-we mutually pledge to each other our Lives, our Fortunes, and our sacred Honor."

The line given above closes the...

a. Gettysburg Address
b. The Mayflower Compact
c. Preamble to the Constitution
d. Declaration of Independence
e. Emancipation Proclamation

History Questions

1. Which of the following Presidents did NOT first serve as Vice-President?

a. Theodore Roosevelt
b. Franklin D. Roosevelt
c. Andrew Johnson
d. Lyndon Johnson
e. John Adams

2. The most powerful opponent to the farmer's attempts to get economic redress following the Civil War up through the turn of the century (1900) was...

a. the Grange
b. the railroads
c. organized labor
d. western mine owners

3. Skyscrapers became a possibility early in the 20th century with an famous invention by...

a. Eli Whitney
b. Henry Ford
c. Thomas Alva Edison
d. Elisha Graves Otis

4. The period of Reconstruction in U.S. history describes the following era...

a. 1855-1875
b. 1861-1865
c. 1865-1877
d. 1870-1890
e. 1900-1920

5. Which of the following composers was Picasso's closest musical contemporary?

a. Monteverdi
b. Josquin
c. Chopin
d. Stravinsky
e. Beethoven

6. "To industry and frugality I owe the early easiness of my circumstances and the acquisition of my fortune with all that knowledge that has enabled me to be a useful citizen."

The statement above is most characteristic of which of the following?

a. Franklin
b. Emerson
c. Thoreau
d. Channing
e. Jefferson

7. Chinese culture and influence were most significant in shaping the institutions of which of the following countries?

a. India, Japan, and Korea
b. Indonesia, Thailand, and the Phillipines
c. Burma, Pakistan, and Bangladesh
d. Japan, Korea, and Vietnam
e. Japan, Korea, and the Phillipines

8. The Dred Scott decision, in effect, ruled which of the following unconstitutional?

a. Agricultural Adjustment Act
b. Sherman Act
c. Pure Food and Drug Act
d. Compromise of 1850
e. The Second Bank of the United States

9. In 17th-century English, Englishmen believed that each man had his place and ought to know it. Rank the following according to their places from highest to lowest:

1-a miller. 2-a noble. 3-a merchant. 4-the king.

a. 2,4,3,1
b. 3,4,2,1
c. 4,2,3,1
d. 4,3,1,2
e. 4,1,2,3

10. Which of the following presidential elections had most to do with the present tendency of people to call themselves "Democrats" or "Republicans"?

a. 1828
b. 1860
c. 1912
d. 1920
e. 1960

Science Questions

1. A molecule can be most accurately described as...

   a. a one-celled living creature
   b. a compound substance
   c. an element
   d. the smallest unit of an element
   e. a combination of atoms

2. The disease polio is known to be ...

   a. hereditary in certain families
   b. caused by a virus that strikes nerve cells
   c. caused by bacteria that float in the air
   d. contagious only in cold climates
   e. preventable through proper nutrition

3. Which of the following describes what happens when a liquid evaporates?

   a. Molecules leave the liquid's surface.
   b. The liquid gradually becomes water.
   c. The liquid separates into its component elements.
   d. Condensation occurs.
   e. Solidification occurs.

4. A person whose gallbladder ha been removed has a decreased ability to store bile. He therefore has a decreased ability to digest...

   a. fats
   b. starches
   c. sugars
   d. protein
   e. vitamins

5. Which of the following is NOT a fossil fuel?

   a. Uranium
   b. Lignite
   c. Petroleum
   d. Anthracite
   e. Bituminous coal

6. Of the planets that are best known and that can be seen with the naked eye (Venus, Mars, Jupiter, Saturn), only Venus has an orbit smaller than that of the Earth. This means that Venus...

   a. is seen only in the morning or evening sky.
   b. can be seen in the sky near midnight more often than at other times.
   c. can rarely be seen at all.
   d. has an orbit that is more elliptical than that of the Earth
   e. has a longer year than the Earth.

7. Which of the following sentences refers correctly to the process of photosynthesis?

   a. It's carried out by all aquatic plants.
   b. Oxygen is necessary for the process to occur.
   c. Light is necessary for the process to occur.
   d. Carbon dioxide is released during the process.
   e. The process has the effect of being a germ-killer in contaminated waters.

8. The number of chromosomes in the cells of the body are how many times the number found in the reproductive cells?

   a. ½
   b. 1/8
   c. ¼
   d. twice
   e. the same

9. The number of hydrogen atoms en $C_2H_5COCH_3$ is...

   a. 2
   b. 8
   c. 5
   d. 10
   e. 3

10. In absolute terms, the greatest contributor to air pollution at present is...

   a. the auto
   b. manufacturing plants
   c. refuse burning
   d. electrical generating plants

GEOGRAPHY QUESTIONS

1. All of the following are capitals of the United States EXCEPT...

   a. Montgomery
   b. Annapolis
   c. Cheyenne
   d. Los Angeles
   e. Topeka

2. Washington States is bordered on the east by the state of ...

   a. Oregon
   b. Idaho
   c. California
   d. Montana
   e. Nevada

3. Which of the following countries is NOT in South America?

   a. Chile
   b. Colombia
   c. Panama
   d. Ecuador
   e. Guyana

4. The Equator cuts through which of the following countries?

   a. Cuba
   b. Australia
   c. China
   d. South Africa
   e. Zaire

5. All of the following are European capitals EXCEPT...

   a. Brussels, Belgium
   b. Berlin, West Germany
   c. Helsinki, Finland
   d. Rome, Italy
   e. Amsterdam, the Netherlands

6. Which of the following countries is behind the Iron Curtain?

   a. the Netherlands
   b. Hungary
   c. Italy
   d. Finland
   e. West Germany

7. All of the following states are on the Gulf of Mexico EXCEPT...

   a. Mississippi
   b. Texas
   c. Georgia
   d. Alabama
   e. Florida

8. All of the following countries have red in their national flags EXCEPT...

   a. U.S.S.R.
   b. Israel
   c. Mainland China
   d. Canada
   e. Japan

9. Which of the following is the only country in South America to have ports on both the Atlantic and Pacific Oceans?

   a. Venezuela
   b. Colombia
   c. Argentina
   d. Brazil
   e. Panama

10. The largest country in Central America is...

   a. Honduras
   b. Nicaragua
   c. Guatemala
   d. Panama
   e. el Salvador

MATH QUESTIONS

1. A ton of metal costs $24. Calculate the cost of 3,000 pounds. (1 ton = 2,000 pounds)

   a. 30
   b. 36
   c. 38
   d. 40
   e. 48

2. In Santa Fe, the meters for parking your car say: "12 minutes for 1¢. Maximum deposit: 10¢." What is the maximum amount of time that a driver can legally park his car at one of these meters?

   a. 12 minutes
   b. 1.2 hours
   c. 1 hours and 12 minutes
   d. 2 hours
   e. 100 minutes

3. John is two times as old as Chuck. The sum of their ages is 39. How old is John?

   a. 10
   b. 13
   c. 19
   d. 20
   e. 26

4. Which of the following quantities is closest to 5% of 2,980?

   a. 75
   b. 90
   c. 150
   d. 198
   e. 300

5. The width of a field is three times its length. If the perimeter (the distance around the field) is 72 feet, what is the length of the field?

   a. 9 feet
   b. 12 feet
   c. 18 feet
   d. 27 feet
   e. 36 feet

6. A library has 60 biographies. This number if 5% of all the books in the library. How many books are there in the library?

   a. 57
   b. 63
   c. 120
   d. 300
   e. 1200

APPENDIX E

Learning Strategy Definitions

REVISED: 1/7/87

LEARNING STRATEGY DEFINITIONS

A. Metacognitive Strategies

Metacognitive strategies involve thinking about the learning process, planning for learning, monitoring the learning task, and evaluating how well one has learned.

1. Advance Organization	Previewing the main ideas and concepts of the material to be learned, often by skimming the text for the organizing principle.
2. Organizational Planning	Planning the parts, sequence, main ideas, or language functions to be expressed orally or in writing.
3. Directed Attention	Deciding in advance to attend in general to a learning task and to ignore irrelevant distractors.
4. Selective Attention	Deciding in advance to attend to specific aspects of input, often by scanning for key words, concepts, and/or linguistic markers.
5. Self-monitoring	Checking one's comprehension during listening or reading, or checking the accuracy and/or appropriateness of one's oral or written production while it is taking place.
6. Self-evaluation	Judging how well one has accomplished a learning activity after it has been completed.
7. Self-management	Understanding the conditions that help one learn and arranging for the presence of those conditions.

B. Social Affective Strategies

Social and affective strategies involve interacting with another person to assist learning, or using affective control to assist a learning task.

1. Questioning for Clarification	Eliciting from a teacher or peer additional explanation, rephrasing, examples, or verification.
2. Cooperation	Working together with peers to solve a problem, pool information, check a learning task, model a language activity, or get feedback on oral or written performance.
3. Self-talk	Reducing anxiety by using mental techniques that make one feel competent to do the learning task.
4. Self-reinforcement	Providing personal motivation by arranging rewards for oneself when a language learning activity has been completed successfully.

C. Cognitive Strategies

Cognitive strategies involve interacting with the material to be learned, manipulating the material mentally or physically, or applying a specific technique to a learning task.

1. Repetition	Imitating a language model exactly, including oral practice, silent practice, and copying.
2. Rehearsal	Rehearsing the language needed, with attention to meaning, for an oral or written task.
3. Resourcing	Using target language reference materials such as dictionaries, encyclopedias, or textbooks.
4. Translation	Using the first language as a base for understanding and/or producing the second language.
5. Grouping	Classifying words, terminology, or concepts according to their attributes.

Cognitive Strategies (continued)

6. Substitution	Using a replacement target language word or phrase when the intended word or phrase is not available.
7. Note-taking	Writing down key words and concepts in abbreviated verbal, graphic, or numerical form during a listening or reading activity.
8. Summarizing	Making a mental or written summary of information gained through listening or reading.
9. Deduction/Induction	Applying rules to understand or produce the second language, or making up rules based on language analysis.
10. Imagery	Using visual images (either mental or actual) to understand and remember new information.
11. Auditory Representation	Playing back in one's mind the sound of a word, phrase, or longer language sequence.
12. Contextualization	Assisting comprehension or recall by placing a word or phrase in a meaningful language sequence or situational context.
13. Elaboration	Relating new information to prior knowledge, relating different parts of new information to each other, or making meaningful personal associations to the new information.
14. Transfer	Using previous linguistic knowledge or prior skills to assist comprehension or production.
15. Inferencing	Using information in an oral or written text to guess meanings, predict outcomes, or complete missing parts.